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FOR THE YEAR 1895.

WITH A LIST OF OFFICERS, FELLOWS, ETC.

EDITED BY

WILLIAM DUNCAN, M.D., SENIOR SECRETARY,

AND

PERCY BOULTON, M.D.

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1891 TARNIER, STÉPHANE, M.D., Professor of Obstetrics, Faculté de Médecine de Paris; 15, Rue Duphot, Paris.

1872 THOMAS, T. GAILLARD, M.D., Professor of Obstetrics in the College of Physicians and Surgeons; 296, Fifth avenue, New York.

1862 VIRCHOW, RUDOLF, M.D., Professor of Pathological Anatomy in the University of Berlin.

1895 VON WINCKEL, Professor, Munich.

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1876 BUDIN, P., M.D., 129, Boulevard St. Germain, Paris. *Trans.* 1.

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1878 BUTLER-SMYTHE, ALBERT CHARLES, L.R.C.P.Ed., 76, Brook street, Grosvenor square, W. *Council*, 1889-91.

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1891† Calthrop, Lionel C. Everard, M.B. Durh., 11, Ellison place, Newcastle-on-Tyne.

1887† Cameron, James Chalmers, M.D., Professor of Midwifery and Diseases of Infancy, McGill University; 941, Dorchester street, Montreal.

1887† Cameron, Murdoch, M.D.Glas., Regius Professor of Midwifery in the University of Glasgow, 7, Newton terrace, Charing Cross, Glasgow.

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1872 Carter, Charles Henry, M.D., Physician to the Hospital for Women, Soho square; 45, Great Cumberland place, Hyde park, W. *Council*, 1880-2. *Trans.* 4.

1890 Carter, Robert James, M.B.Lond., 57, Acacia road, N.W.

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1867*†CHARLES, T. EDMONDSTOUNE, M.D., F.R.C.P., 72, Via di San Niccolò da Tolentino, Rome. *Council*, 1882-4.

1874*†CHARLESWORTH, JAMES, M.D., Physician to the North Staffordshire Infirmary; 25, Birch terrace, Hanley, Staffordshire.

1886† CHARPENTIER, AMBROSE E. L., M.D.Durh., Rathmines House, Uxbridge.

1892† CHEPMELL, CHARLES WILLIAM JAMES, M.D. Brux., 87, Buckingham road, Brighton.

1868*†CHILD, EDWIN, "Vernham," New Malden, Kingston-on-Thames, Surrey.

1890† CHILDE, CHARLES PLUMLEY, B.A., F.R.C.S., Cranleigh, Kent road, Southsea.

1863*†CHISHOLM, EDWIN, M.D., Abergeldie, Ashfield, near Sydney, New South Wales. [Per Messrs. Turner and Henderson, care of Messrs. W. Dawson, 121, Cannon street, E.C.]

1883 CLAPHAM, EDWARD, M.D., 29, Lingfield road, Wimbledon. *Council*, 1892-4.

1859 CLAREMONT, CLAUDE CLARKE, Millbrook House, 1, Hampstead road, N.W. *Council*, 1896.

1879 CLARKE, REGINALD, South Lodge, Lee park, Lee, S.E.

1893 CLARKE, W. BRUCE, F.R.C.S., 46, Harley street, W.

1876† CLAY, GEORGE LANGSFORD, West View, 443, Moseley road, Highgate, Birmingham.

1889 CLEMOW, ARTHUR HENRY WEISS, M.D., C.M. Edin., 101, Earl's Court road, Kensington, W.

Elected

O.F. CLEVELAND, WILLIAM FREDERICK, M.D., Stuart villa, 199, Maida vale, W. *Council*, 1863-4. *Vice-Pres.* 1875-7, 1887-9. *Trans.* 1.

1881† CLOSE, JAMES ALEX., M.B., 2031, Olive street, St. Louis, Missouri, U.S.A.

1865*†COATES, CHARLES, M.D., Physician to the Bath General and Royal United Hospitals; 10, Circus, Bath.

1882† COATES, FREDERICK WILLIAM, M.D. (travelling). *Council*, 1891-3.

1875 COFFIN, RICHARD JAS. MAITLAND, F.R.C.P. Ed., 98, Earl's Court road, W.

1878 COFFIN, THOMAS WALKER, 22, Upper Park road, Haverstock hill, N.W.

1875*†COLE, RICHARD BEVERLY, M.D. Jefferson Coll. Philad., 218, Post street, San Francisco, California, U.S.

1895† COLES, ALFRED CHARLES, M.D., C.M.Edin., Rivoli, Grosvenor road, Bournemouth.

1895 COLLIER, SAMUEL RUDDELL, M.D., 13, Hartfield road, Wimbledon.

1888† COLLINS, EDWARD TENISON, 12, Windsor place, Cardiff.

1877 COLMAN, WALTER TAWELL (travelling).

1866† COOMBS, JAMES, M.D., Bedford.

1888 COOPER, PETER, L.R.C.P.Lond., Stainton Lodge, 35, Shooter's Hill road, Blackheath, S.E.

1890 COPELAND, WILLIAM HENRY LAURENCE, M.B.Cantab., 59, Warwick road, Earl's Court, S.W.

1888† CORBY, HENRY, B.A., M.D., 19, St. Patrick's place, Cork.

1875*†CORDES, AUG., M.D., M.R.C.P., Consulting Accoucheur to the "Miséricorde;" Privat Docent for Midwifery at the University of Geneva; 12, Rue Bellot, Geneva. *Trans.* 1.

1883 CORNER, CURSHAM, 113, Mile End road, E.

1888† CORNISH, CHARLES NEWTON, L.R.C.P. Ed., 4, Southwick place, Hyde park W.

Elected

1860*†Corry, Thomas Charles Steuart, M.D., Senior Surgeon to the Belfast General Dispensary; 1, Glenfield place, Ormeau road, Belfast. *Council,* 1867. *Vice-Pres.* 1891-3. *Hon. Loc. Sec.*

1875 Cory, Robert, M.D., Assistant Obstetric Physician to St. Thomas's Hospital; 73, Lambeth Palace road, S.E. *Council,* 1879-81, 1884-5. *Vice-Pres.* 1887-88. *Trans.* 1.

1886† Cox, Joshua John, M.D. Ed., St. Ronan's, Clarendon road, Eccles, Manchester.

1869† Cox, Richard, M.D. St. And., Theale, near Reading. *Trans.* 1.

1893† Craig, James, M.D. Edin., Brisgow House, Beckenham.

1877 Crawford, James, M.D. Durh., Grosvenor Mansions, 80, Victoria street, S.W.

1881† Creasy, James Gideon, West House, Wrotham, Kent.

1876† Crew, John, Manor House, Higham Ferrers, Northamptonshire.

1893 Cripps, William Harrison, F.R.C.S., 2, Stratford place, W.

1889† Croft, Edward Octavius, L.R.C.P. Lond., 8, Clarendon road, Leeds.

1881*†Cronk, Herbert George, M.B. Cantab., Repton, near Burton-on-Trent.

1893 Crosby, Herbert Thomas, M.A., M.B., B.C.Cantab., 19, Gordon square, W.C.

1895 Cross, Ernest, L.R.C.P.Lond., St. Bartholomew's Hospital, E.C.

1886*†Cross, William Joseph, M.B., Horsham, Victoria, Australia.

1889† Crouch, Edward Thomas, Stoke House, Gosport.

1875* Cullingworth, Charles James, M.D., D.C.L., F.R.C.P., Obstetric Physician to, and Lecturer on Obstetric Medicine at, St. Thomas's Hospital; 46, Brook street, Grosvenor square, W. *Council,* 1883-5, 1891-3. *Vice-Pres.* 1886-8. *Board Exam. Midwives,* 1889-91. *Chairman,* 1895-6. *Trans.* 12.

Elected

1889*†CURSETJI, JEHÁNGIR J., M.D. Brux., 94, Chundunwádi, Bombay.

1894 CUTLER, LENNARD, L.R.C.P.Lond., 8, Gloucester road, S.W. *Trans.* 1.

1885 DAKIN, WILLIAM RADFORD, M.D., B.S., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, St. George's Hospital; 57, Welbeck street, Cavendish square, W. *Council*, 1889-91. *Hon. Lib.* 1892-3. *Hon. Sec.* 1894-6. *Trans.* 3.

1868 DALY, FREDERICK HENRY, M.D., 185, Amhurst road, Hackney Downs, N.E. *Council*, 1877-9. *Vice-Pres.* 1883-5. *Trans.* 2.

1882† DAMBRILL-DAVIES, WILLIAM R., Alderley Edge, Cheshire.

1893 DAUBER, JOHN HENRY, M.A. Oxon., L.R.C.P. Lond., 29, Charles street, Berkeley square, W.

1889 DAVIES, FREDERICK HENRY, M.B., C.M.Edin., 30, Camberwell green, S.E.

1876 DAVIES, GOMER, L.R.C.P. Ed., 9, Pembridge villas, Bayswater, W.

1884 DAVIES, JOHN, 91, New North road, N.

1885 DAVIES, WILLIAM MORRISTON, M.D., 55, Gordon square, W.C.

1892† DAVIS, ROBERT, Oakleigh, Epsom.

1895 DAVOREN, JOHN, L.R.C.P.I., C.M., 1, Wilmington square, W.C.

1877 DAVSON, SMITH HOUSTON, M.D., Campden villa, 203, Maida vale, W. *Council*, 1889-91.

1891 DAWSON, ERNEST, L.R.C.P.Lond., Linden House, High road, Leyton, E.

1889† DAWSON, WILLIAM EDWARD, L.R.C.P.I., Walton-on-Naze, near Colchester.

1889 DES VŒUX, HAROLD A., M.D.Brux., 4, Ashley gardens, Victoria street, S.W. *Council*, 1896.

Elected

1894 Dickinson, Thomas Vincent, M.D. Lond., 33, Sloane street, S.W.

1894 Dickinson, William Gilbert, L.R.C.P. Lond., Thanet Lodge, Southfields, Wandsworth, S.W.

1894 Dickson John William, B.A., M.B., B.C. Cantab., 3, Hertford street, W.

1895 Dodgson, George Stanley, B.A., M.B., B.C.Cantab., Middlesex Hospital, W.

1879† Dolan, Thomas Michael, M.D., Horton house, Halifax.

1886† Donald, Archibald, M.A., M.D. Edin., 274, Oxford road, Manchester. *Council*, 1893-5. *Trans.* 1.

1879* Doran, Alban H. G., F.R.C.S., Surgeon to the Samaritan Free Hospital; 9, Granville place, Portman square, W. *Council*, 1883-5. *Hon. Lib.* 1886-7. *Hon. Sec.* 1888-91. *Vice-Pres.* 1892-4. *Trans.* 14.

1890† Douty, Edward Henry, M.A., M.B., B.C. Cantab., 69, Bridge street, Cambridge.

1887 Dovaston, Milward Edmund.

1893 Dowding, Alexander William Woodman, M.D.Durh., Forest Lodge, Wanstead, N.E.

1884† Doyle, E. A. Gaynes, L.R.C.P., Colonial Hospital, Port of Spain, Trinidad.

O.F.† Drage, Charles, M.D., Hatfield, Herts. *Council*, 1861-4, *Trans.* 1.

1885† Drage, Lovell, M.A., M.D., B.S. (Oxon.), Burleigh Mead, Hatfield. *Council*, 1894-6.

1871† Drake-Brockman, Edward Forster, F.R.C S., L.R.C.P. Lond., Brigade-Surgeon; Superintendent Eye Infirmary, Madras; Professor of Physiology and Ophthalmology, Madras Medical College. [*Per* Messrs. Richardson and Co., East India Army Agency, 25, Suffolk street, Pall Mall, S.W.]

1884 Drake, Charles Henry, 204, Brixton hill, S.W.

1894† Drew, Henry William, F.R.C.S., Meaburn, Coombe road, Croydon.

Elected

1883 DUNCAN, ALEXANDER GEORGE, M.B., 25, Amhurst park, Stamford hill, N.

O.F. DUNCAN, JAMES, M.B., 8, Henrietta street, Covent garden, W.C. *Council*, 1873-4. *Vice-Pres.* 1895.

1882 DUNCAN, WILLIAM, M.D., Obstetric Physician to, and Lecturer on Obstetric Medicine at, the Middlesex Hospital; 6, Harley street, W. *Council*, 1885-6, 1888-9. *Hon. Lib.* 1890-1. *Hon. Sec.* 1892-5. *Vice-Pres.* 1896. *Trans.* 2.

1893† DUNN, PHILIP HENRY, L.R.C.P. Lond., Stevenage, Herts.

1871* EASTES, GEORGE, M.B., F.R.C.S., 35, Gloucester place, Hyde park, W. *Council*, 1878-80.

1883† ECCLES, F. RICHARD, M.D., Professor of Gynæcology, Western University; 1, Ellwood place, Queen's avenue, London, Ontario, Canada.

1892 ECCLES, WILLIAM MCADAM, M.B., B.S.Lond., 10, Welbeck street, Cavendish square, W.

1893 EDEN, THOMAS WATTS, M.D., C.M.Edin., 21, Bentinck street, Cavendish square, W. *Trans.* 1.

1890† EHRMANN, ALBERT, L.R.C.P.Lond., Bitterne, near Southampton.

1879† ELDER, GEORGE, M.D., C.M., Surgeon to the Samaritan Hospital for Women, Nottingham; 17, Regent street, Nottingham.

1895 ELKINGTON, H. P. G., Surgeon-Captain, The Tower, E.C.

1878† ELLERY, RICHARD, L.R.C.P. Ed., Plympton, Devon.

1894 ELLIS, ROBERT KINGDON, M.B., B.Ch.Oxon., Westgate, Peterborough.

1873*†ENGELMANN, GEORGE JULIUS, A.M., M.D., 3003, Locust street, St. Louis, Missouri, U.S.

1892† EVANS, JOHN MORGAN, L.R.C.P.Lond., Llandrindod Wells, Radnorshire.

1875† EWART, JOHN HENRY, Eastney, Devonshire place, Eastbourne.

1894 FAIRWEATHER, DAVID, M.A., M.B., C.M.Edin., 2, Nightingale road, Wood Green, N.

Elected

1876† FARNCOMBE, RICHARD, 40, Belgrave street, Balsall heath, Birmingham.

1869 FARQUHAR, WILLIAM, M.D., Deputy Surgeon-General, 17, St. Stephen's road, Bayswater, W.

1861 FARR, GEO. F., L.R.C.P. Ed., Slade House, 175, Kennington road, S.E. *Council*, 1885.

1882† FARRAR, JOSEPH, M.D., Gainsborough. *Trans.* 1.

1894† FAZAN, CHARLES HERBERT, L.R.C.P. Lond., Belmont, Wadhurst, Sussex.

1868* FEGAN, RICHARD, M.D., Westcombe park, Blackheath, S.E.

1886 FENNELL, DAVID, L.K.Q.C.P.I., 20, Dalston lane, N.E.

1883 FENTON, HUGH, M.D., 27, George street, Hanover square, W.

1893 FERGUSON, GEORGE GUNNIS, M.B., C.M.Glas., 62, Holmdale road, West Hampstead, N.W.

1893† FINLEY, HARRY, M.D.Lond., Wimborne Minster, Dorset.

1892† FINNY, W. EVELYN ST. LAWRENCE, M.B. Dubl., Kenlis, Queen's road, Kingston hill.

1886† FISHER, FREDERICK BAZLEY, L.R.C.P. Lond., West Walk House, Dorchester.

1882† FITZGERALD, CHARLES EGERTON, M.D., West terrace, Folkestone.

1877*†FONMARTIN, HENRY DE, M.D., 26, Newberry terrace, Lower Bullar street, Nichols Town, Southampton.

1884† FORD, ALEXANDER, L.R.C.P. Ed., 9, Beresford street, Waterford.

1877*†FORD, JAMES, M.D., Sandford, Crediton, Devon.

1884 FOURACRE, ROBERT PERRIMAN, 20, Tollington park, N.

1886† FOWLER, CHARLES OWEN, M.D., Cotford House, Thornton heath.

1875*†FRASER, ANGUS, M.D., Physician and Lecturer on Clinical Medicine to the Aberdeen Royal Infirmary; 232, Union street, Aberdeen.

Elected

1888† FRASER, JAMES ALEXANDER, L.R.C.P. Lond., Western Lodge, Romford.

1867† FREEMAN, HENRY W., 24, Circus, Bath. *Council*, 1891-3.

1883 FULLER, HENRY ROXBURGH, M.D. Cantab., 45, Curzon street, Mayfair, W. *Council*, 1893. *Trans.* 1.

1886† FURNER, WILLOUGHBY, F.R.C.S., 13, Brunswick square, Brighton. *Council*, 1894-6. *Hon. Loc. Sec.*

1874* GALABIN, ALFRED LEWIS, M.A., M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, Guy's Hospital; 49, Wimpole street, Cavendish square, W. *Council*, 1876-8. *Hon. Lib.* 1879. *Hon. Sec.* 1880-3. *Vice-Pres.* 1884. *Treas.* 1885-8. *Pres.* 1889-90. *Trans.* 12.

1888 GALLOWAY, ARTHUR WILTON, L.R.C.P. Lond., 79, New North road, N.

1863* GALTON, JOHN H., M.D., Chunam, Sylvan road, Upper Norwood, S.E. *Council*, 1874-6, 1891-2. *Vice-Pres.* 1895-6.

1881 GANDY, WILLIAM, Hill Top, Central hill, Norwood, S.E.

1886† GARDE, HENRY CROKER, F.R.C.S. Edin., Maryborough, Queensland.

1887 GARDINER, BRUCE H. J., L.R.C.P. Ed., Gloucester House Barry road, East Dulwich, S.E.

1894 GARDNER, H. BELLAMY, M.R.C.S., L.R.C.P.Lond., 11A, Welbeck street, W.

1879† GARDNER, JOHN TWINAME, Northfield House, Ilfracombe.

1872† GARDNER, WILLIAM, M.A., M.D., Professor of Gynæcology, McGill University; Gynæcologist to the Montreal General Hospital; 109, Union avenue, Montreal, Canada.

1892† GARDNER, WILLIAM, M.B., C.M.Glas., 5, Collins street, Melbourne.

1876† GARNER, JOHN, 52, New Hall street, Birmingham.

1891† GARRETT, ARTHUR EDWARD, L.R.C.S., & L.M.Ed., The Limes, Rickmansworth.

1873*†GARTON, WILLIAM, M.D., F.R.C.S., Inglewood, Aughton, near Ormskirk.

Elected

1889* GELL, HENRY WILLINGHAM, M.A., M.B. Oxon., 43, Albion street, Hyde park, W.

1859* GERVIS, HENRY, M.D., F.R.C.P., Consulting Obstetric Physician to St. Thomas's Hospital; 40, Harley street, Cavendish square. *Council*, 1864-6, 1889-91, 1893. *Hon. Sec.* 1867-70. *Vice-Pres.* 1871-3. *Treas.* 1878-81. *Pres.* 1883-4. *Trans.* 8.

1866* GERVIS, FREDERICK HEUDEBOURCK, 1, Fellows road, Haverstock hill, N.W. *Council*, 1877-9. *Vice-Pres.* 1892. *Trans.* 1.

1884† GIBB, CHARLES JOHN, M.D., Westgate House, Newcastle-on-Tyne.

1875 GIBBINGS, ALFRED THOMAS, M.D., 93, Richmond road, Dalston, N.E. *Council*, 1885-6, 1888.

1883 GIBBONS, ROBERT ALEXANDER, M.D., Physician to the Grosvenor Hospital for Women and Children; 29, Cadogan place, S.W. *Council*, 1889-90. *Trans.* 1.

1894 GIBSON, HENRY WILKES, L.R.C.P. Lond., 11, College crescent, South Hampstead, N.W.

1874† GIBSON, JAMES EDWARD, Hillside, West Cowes, Isle of Wight.

1892 GILES, ARTHUR EDWARD, M.D. Lond., M.R.C.P., Physician to Out-patients, Chelsea Hospital for Women; 57, Queen Anne street, Cavendish square, W. *Trans.* 5.

1869 GILL, WILLIAM, L.R.C.P. Lond., 11, Russell square, W.C.

1891 GIMBLETT, WILLIAM HENRY, L.R.C.P.I., 1, Pembury road, Clapton, N.E.

1891† GLEDDEN, ALFRED MAITLAND, M.D., c/o L. Bruck, 13, Castlereagh street, Sydney, N.S.W.

1894† GODDARD, CHARLES ERNEST, L.R.C.P. Lond., Wembley, Harrow.

1871 GODDARD, EUGENE, M.D. Durh., North Lynne, 106, Highbury New Park, N. *Trans.* 1.

1871 *GODSON, CLEMENT, M.D., C.M.; 9, Grosvenor street, W. *Council*, 1876-7. *Hon. Sec.* 1878-81. *Vice-Pres.* 1882-4. *Board Exam. Midwives*, 1877, 1882-86. *Trans.* 5.

Elected

1893† GOODMAN, ROGER NEVILLE, M.A., M.B.Cantab., Elmside, Kingston-on-Thames.

1893† GORDON, FREDERICK WILLIAM, L.R.C.P.Lond., Newmarket, Auckland, New Zealand; c/o G. Gordon, 18, Bread street, E.C.

1883 GORDON, JOHN, M.D., 20, Wickham road, Brockley, S.E.

1869† GOSS, TREGENNA BIDDULPH, 1, The Circus, Bath. *Hon. Loc. Sec.*

1891† GOSTLING, WILLIAM AYTON, M.D., B.S.Lond., Barningham, West Worthing.

1889 GOULLET, CHARLES ARTHUR, L.R.C.P.Lond., 2, Finchley road, N.W.

1890 GOW, WILLIAM JOHN, M.D.Lond., Physician-Accoucheur in charge of Out-patients, St. Mary's Hospital; 27, Weymouth street, W. *Council*, 1893-5. *Trans.* 2.

1893† GOWAN, BOWIE CAMPBELL, L.R.C.P.Lond., Raven Dene, Great Stanmore.

1893 GRANT, LEONARD, M.D.Edin., 9, Western villas, New Southgate, N.

1890† GRAY, HARRY ST. CLAIR, M.D. Glas., 15, Newton terrace, Glasgow.

1875† GRAY, JAMES, M.D., 15, Newton terrace, Glasgow.

1890 GREEN, CHARLES DAVID, M.D.Lond., Addison House, Upper Edmonton.

1894† GREEN, CHARLES ROBERT MORTIMER, The Eden Hospital, Calcutta.

1887 GREENWOOD, EDWIN CLIMSON, L.R.C.P., 19, St. John's wood park, N.W.

1863 *GRIFFITH, G. DE GORREQUER, 34, St. George's square, S.W. *Trans.* 2.

1879* GRIFFITH, WALTER SPENCER ANDERSON, M.D. Cantab., F.R.C.S., F.R.C.P., Assistant Physician-Accoucheur to St. Bartholomew's Hospital; 96, Harley street, W. *Council*, 1886-8, 1893-5. *Hon. Lib.*, 1896. *Board Exam. Midwives*, 1887-9. *Trans.* 8.

Elected

1870 *Grigg, William Chapman, M.D., Physician to the In-patients, Queen Charlotte's Lying-in Hospital; 27, Curzon street, Mayfair. *Council*, 1875-7. *Board Exam. Midwives*, 1878-9.

1888*†Grimsdale, Thomas Babington, B.A., M.B. Cantab., 50, Rodney street, Liverpool.

1882† Gripper, Walter, M.B. Cantab., The Poplars, Wallington, Surrey.

1880 Grogono, Walter Atkins, Berwick House, Broadway, Stratford, E.

1892 Gubb, Alfred Samuel, M.D. Paris, 29, Gower street, W.C.

1887† Hackney, John, M.D. St. And., Oaklands, Hythe.

1881† Hair, James, M.D., Brinklow, Coventry.

1889 Hale, Charles D. B., M.D., 3, Sussex place, Hyde park, W.

1871† Hallowes, Frederick B., Redhill, Reigate, Surrey. *Council*, 1885-6, 1888-90.

1880 Hames, George Henry, F.R.C.S., 29, Hertford street, Park lane, W.

1894 Hamilton, Bruce, L.R.C.P.Lond., "Falklands," 9, Frognal, N.W.

1894† Hamilton, David Livingston, L.R.C.P. Edin., 260, Oxford road, Manchester.

1887† Hamilton, John, F.R.C.S.Ed., Beechhurst House, Swadlincote, Burton-on-Trent.

1883 Handfield-Jones, Montagu, M.D. Lond., M.R.C.P., Physician-Accoucheur to, and Lecturer on Midwifery and Diseases of Women at, St. Mary's Hospital; 35, Cavendish square, W. *Council*, 1887-9, 1896. *Board Exam. Midwives*, 1894-6. *Trans.* 1.

1889† Hardwick, Arthur, M.D. Durh., Newquay, Cornwall.

1886† Hardy, Henry L. P., Holly Lodge, Richmond road, Kingston-on-Thames.

Elected

1892 HAROLD, JOHN, L.R.C.P.Lond., 91, Harley street, W.

1889 HARPER, CHARLES JOHN, L.R.C.P. Lond., Church end, Finchley, N.

1877 HARPER, GERALD S., M.B.Aber., 40, Curzon street, Mayfair, W. *Council*, 1894-5.

1878† HARRIES, THOMAS DAVIES, F.R.C.S., Grosvenor House, Aberystwith, Cardiganshire.

1867* HARRIS, WILLIAM H., M.D., 32, Cambridge gardens, W.

1880* HARRISON, RICHARD CHARLTON, 19, Uxbridge road, Ealing, W.

1893† HARRISON, SYDNEY NEVILL, M.B., B.C. Cantab., Aveley Court, Stourport.

1890† HART, DAVID BERRY, M.D.Edin., 29, Charlotte square, Edinburgh.

1886† HARTLEY, HORACE, L.R.C.P. Ed., Stone, Staffordshire.

1886† HARTLEY, REGINALD, L.R.C.P. Ed., Kirkgate House, Thirsk.

1894 HARTZHORNE, BERNARD FRED., M.R.C.S., Blenheim Lodge, High road, Chiswick.

1893† HARVEY, JOHN JORDAN, L.R.C.P.&S.Edin.

1880 HARVEY, JOHN STEPHENSON SELWYN, M.D.Durh., M.R.C.P., 1, Astwood road, Cromwell road, S.W.

1865† HARVEY, ROBERT, M.D., Abbottabad, Punjab. [Per Messrs. Cochran and Macpherson, 152, Union street, Aberdeen.] *Trans.* 1.

1886 HARVEY, SIDNEY FRED., L.R.C.P.Lond., 117A, Queen's Gate, S.W.

1892† HAWKINS-AMBLER, GEORGE ARTHUR, F.R.C.S.Ed., 162, Upper Parliament street, Liverpool.

1888† HAYCOCK, HENRY EDWARD, L.R.C.P.Ed., Ironville House, Alfreton, Derbyshire.

1893† HAYDON, THOMAS HORATIO, M.B., B.C. Cantab., 22, High street, Marlborough.

Elected

1873 HAYES, THOMAS CRAWFORD, M.A., M.D., F.R.C.P., Obstetric Physician to King's College Hospital, and Lecturer on Practical Midwifery at King's College; 17, Clarges street, Piccadilly, W. *Council*, 1876-8. *Vice-Pres.* 1890-1.

1880 HEATH, WILLIAM LENTON, M.D., 90, Cromwell road, Queen's gate, S.W. *Council*, 1891. *Trans.* 1.

1893† HEELAS, WALTER WHEELER, L.R.C.P.Lond., 2, Clifton Terrace, Chapel Ash, Wolverhampton.

1894 HELBY, ERNEST H., L.R.C.P. Lond., Governor's House, H.M. Prison, Wandsworth, S.W.

1892† HELLIER, JOHN BENJAMIN, M.D.Lond., Lecturer on Diseases of Women and Children, Yorkshire College; Surgeon to the Hospital for Women and Children, Leeds; 1, De Grey terrace, Leeds.

1890† HELME, T. ARTHUR, M.D.Edin., 258, Oxford road, Manchester.

1867† HEMBROUGH, JOHN WILLIAM, M.D., Earsdon, Newcastle-on-Tyne.

1876* HERMAN, GEORGE ERNEST, M.B., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery at, the London Hospital; 20, Harley street, Cavendish square, W. *Council*, 1878-9. *Hon. Lib.* 1880-1. *Hon. Sec.* 1882-5. *Vice-Pres.* 1886-7. *Board Exam. Midwives*, 1886-8. *Treas.* 1889-92. *Pres.* 1893-4. *Trans.* 29.

1860*†HICKS, JOHN BRAXTON, M.D., F.R.C.P., F.R.S., Consulting Obstetric Physician to Guy's and St. Mary's Hospitals; The Brackens, Lymington, Hants. *Council*, 1861-2, 1869. *Hon. Sec.* 1863-5. *Vice-Pres.* 1866-8. *Treas.* 1870. *Pres.* 1871-2. *Trans.* 40.

1892† HILLS, THOMAS HYDE, L.R.C.P.Lond., 60, St. Andrew's street, Cambridge.

1886† HODGES, HERBERT CHAMNEY, L.R.C.P.Lond., Watton, Herts. *Trans.* 1.

Elected

1886† HOLBERTON, HENRY NELSON, L.R.C.P. Lond., East Molesey.

1875 HOLLINGS, EDWIN, M.D., 25, Endsleigh gardens, N.W. *Council*, 1888-90. *Vice-Pres.* 1893-4.

1859 HOLMAN, CONSTANTINE, M.D., 26, Gloucester place, Portman square, W. *Council*, 1867-9, 1895-6. *Vice-Pres.* 1870-1.

1891† HOLMAN, ROBERT COLGATE, Whithorne House, Midhurst, Sussex.

1864* HOOD, WHARTON PETER, M.D., 11, Seymour street, Portman square, W.

1884 HOPKINS, JOHN, L.R.C.P. Ed., 93, Camberwell road, S.E.

1894† HORNE, EDWARD, M.R.C.S., St. Mary's street, Wallingford.

1883* HORROCKS, PETER, M.D., F.R.C.P. Lond., Assistant Obstetric Physician to, and Demonstrator of Practical Obstetrics at, Guy's Hospital; 26, St. Thomas's street, S.E. *Council*, 1886-7. *Hon. Lib.* 1888-9. *Hon. Sec.* 1890-3. *Vice-Pres.* 1894-6. *Trans.* 2.

1876 HORSMAN, GODFREY CHARLES, 22, King street, Portman square, W.

1893† HOSKER, JAMES ATKINSON, Kirkleatham, Boscombe, Bournemouth.

1883 HOSKIN, THEOPHILUS, L.R.C.P. Lond., 186, Amhurst road, N.E.

1883 HOUCHIN, EDMUND KING, L.R.C.P. Ed., 23, High street, Stepney, E.

1884† HOUGH, CHARLES HENRY, Full street, Derby.

1877 HOWELL, HORACE SYDNEY, M.D., East Grove House, 18, Boundary road, St. John's Wood, N.W.

1879† HUBBARD, THOMAS WELLS, Barming place, Maidstone.

1894† HUDLESTON, WILFRED E., L.R.C.P. Lond., Royal Berks Hospital, Reading.

1889† HUMPHRYS, CHARLES BEYER, L.R.C.P. & S. Edin., Eagle House, Blandford, Dorset.

Elected

1884*†Hurry, Jamieson Boyd, M.D. Cantab., 43, Castle street, Reading. *Council*, 1887-9. *Trans.* 2.

1878† Husband, Walter Edward, Ebor Lodge, Higher Broughton, Manchester.

1895 Huxley, Henry, L.R.C.P.Lond., 2, Queensborough terrace, W.

1894† Ilott, Herbert James, M.D. Aber., 57, High street, Bromley, Kent.

1883† Inman, Robert Edward, Gadshill Cottage, Higham, Kent.

1884† Irwin, John Arthur, M.A., M.D., 14, West Twenty-ninth street, New York.

1883† Jackson, George Henry, St. Levans, Upperton, Eastbourne.

1873† Jakins, William Vosper, L.R.C.P. Ed., 14, Collins street East, Melbourne.

1872† Jalland, Robert, Horncastle, Lincolnshire. *Trans.* 1.

1890† James, Charles Henry, L.R.C.P.Lond., Surg. Indian Army ; Lahore, India.

1895† James, Stanlake, Violet hill, Simla, India.

1885† Jamieson, Robert Alexander, M.D., Shanghai. [Per Messrs. Henry S. King and Co., 65, Cornhill, E.C.]

1886 Jamison, Arthur Andrew, M.D. Glas., 18, Lowndes street, S.W.

1883*†Jenkins, Edward Johnstone, M.D. Oxon., 213, Macquarie street, Sydney.

1877† Jenks, Edward W., M.D., 84, Lafayette avenue, Detroit. Michigan, U.S.

1882 Jennings, Charles Egerton, M.D. Durh., F.R.C.S. Eng., Assistant Surgeon to the North-West London Hospital ; 48, Seymour street, Portman square, W.

1888† Johnson, Arthur Jukes, M.B., 52, Bloor street West, Toronto, Ontario, Canada.

1877† Johnson, Samuel, M.D., 5, Hill street, Stoke-upon-Trent.

1881 Johnston, Joseph, M.D., 24, St. John's Wood park, N.W. *Council*, 1891-2.

Elected

1894 JOHNSTONE, R. W., M.D., B.Ch., 36, Cheyne Court, Chelsea, S.W.

1879 JOHNSTON, WM. BEECH, M.D., 157, Jamaica road, Bermondsey, S.E.

1868† JONES, EVAN, Ty-Mawr, Aberdare, Glamorganshire. *Council*, 1886-8. *Vice.-Pres.* 1890-1. *Hon. Loc. Sec.*

1894 JONES, EVAN, L.R.C.P. Lond., 89, Goswell road, E.C.

1895† JONES, GEORGE HORATIO, Deddington, Oxon.

1878 JONES, H. MACNAUGHTON, M.D., F.R.C.S.I. and Edin., 141, Harley street, Cavendish square, W.

1881† JONES, JAMES ROBERT, M.B., 247, Donald street, Winnipeg, Manitoba, Canada.

1894† JONES, JOHN ARNALLT, L.R.C.P. Lond., Heathmont, Aberavon, Port Talbot, Glamorganshire.

1887† JONES, J. TALFOURD, M.B. Lond., Consulting Physician to the Breconshire Infirmary, Rose Bank, South terrace, Eastbourne.

1886 JONES, LEWIS, M.D., Oakmead, Balham, S.W.

1885† JONES, P. SYDNEY, M.D., 16, College street, Hyde park, Sydney. [Per Messrs. D. Jones and Co., 122 and 124, Wool Exchange, Basinghall street, E.C.]

1873† JONES, PHILIP W., River House, Enfield.

1886† JONES, WILLIAM OWEN, The Downs, Bowdon, Manchester.

1879† JOUBERT, CHARLES HENRY, M.B. Lond., F.R.C.S. Eng., Surgeon-Major, Bengal Medical Department; Obstetric Physician to Eden Hospital, and Professor of Midwifery and Diseases of Women and Children, Calcutta Medical College; 6, Harington street, Calcutta.

1878† JUDSON, THOMAS ROBERT, L.R.C.P. Lond., 44, Mill lane, West Derby, Liverpool.

1875† JUKES, AUGUSTUS, M.B., N. W. Mounted Police, Regina, N.-W. Territory, Canada.

1878† KANE, NATHANIEL H. K., M.D., Lanherne, Kingston hill, Surrey.

Elected

1890 KANTHACK, ALFREDO ANTUNES, M.D. Lond., St. Bartholomew's Hospital, E.C.

1884 KEATES, WILLIAM COOPER, L.R.C.P., 2, Tredegar villas, East Dulwich road, S.E.

1880† KEBBELL, ALFRED, Flaxton, York.

1883† KEELING, JAMES HURD, M.D., 267, Glossop road, Sheffield. *Hon. Loc. Sec.*

1890 KEITH, SKENE, M.B., C.M.Edin., 42, Charles street. Berkeley Square, W.

1894 KELLETT, ALFRED FEATHERSTONE, M.B., B.C.Cantab., 146, Lewisham road, S.E.

1874* KEMPSTER, WILLIAM HENRY, M.D., Chesterfield, Clapham common, North side, S.W.

1886 KENNEDY, ALFRED EDMUND, L.R.C.P. Ed., Chesterton House, Plaistow, E.

1879 KER, HUGH RICHARD, L.R.C.P.Ed., Tintern, 2, Balham hill, S.W.

1895† KERR, JOHN MARTIN MUNRO, M.B., C.M.Glasg., 28, Berkeley terrace, Glasgow.

1872 KERR, NORMAN S., M.D., F.L.S., 42, Grove road, Regent's park, N.W.

1877*†KERSWILL, JOHN BEDFORD, M.R.C.P. Ed., Fairfield, St. German's, Cornwall.

1878† KHORY, RUSTONJEE NASERWANJEE, M.D., M.R.C.P., Medical Syndic, Bombay University; Honorary Physician, Bai Motlibai Obstetric and Gynæcological Hospital; Hormazd Villa, Khumballa hill, Bombay.

O.F.* KIALLMARK, HENRY WALTER, 5, Pembridge gardens, Bayswater. *Council*, 1879-80.

1895† KING, ARTHUR, M.B., C.M., Station road, Watford.

1892† KINGSCOTE, ERNEST, M.B., C.M.Edin., The Hall, Salisbury.

1872* KISCH, ALBERT, 186, Sutherland avenue, W. *Council*, 1896.

Elected

1876† KNOTT, CHARLES, M.R.C.P. Ed., Liz Ville, Elm grove, Southsea.

1889 LAKE, GEORGE ROBERT, 177, Gloucester terrace, Hyde park, W.

1867* LANGFORD, CHARLES P., Sunnyside, Hornsey lane, N.

1883 LANGLEY, AARON, L.R.C.P. Ed., 149, Walworth road, S.E.

1886 LANKESTER, HERBERT HENRY, M.D. Lond., Church Missionary Society, Salisbury square, E.C.

1893† LAVER, HENRY, Head street, Colchester.

1887 LAW, WILLIAM THOMAS, M.D. Edin., 9, Norfolk crescent, W.

1875† LAWRENCE, ALFRED EDWARD AUST, M.D., Physician-Accoucheur to the Bristol General Hospital; 19, Richmond hill, Clifton, Bristol. *Council*, 1885-6, 1888. *Vice-Pres.*, 1889-90. *Hon. Loc. Sec. Trans.* 1.

1894† LEA, ARNOLD W. W., M.D., B.S.Lond., F.R.C.S., Bradshaw house, Congleton.

1894† LEAHY, ALBERT WILLIAM DENIS, M.D. Durh., F.R.C.S., 6, Elysium road, Calcutta.

1884*†LEDIARD, HENRY AMBROSE, M.D., 35, Lowther street, Carlisle. *Council*, 1890-2. *Trans.* 1.

1894† LEE, SIDNEY HERBERT, B.A., M.B., B.C.Cantab., The Moat, Thame, Oxon.

1887† LEES, EDWIN LEONARD, M.D., C.M. Ed., 2, The Avenue, Redland road, Bristol.

1885 LEWERS, ARTHUR H. N., M.D. Lond., M.R.C.P., Obstetric Physician to the London Hospital; 72, Harley street, W. *Council*, 1887-9, 1893. *Board Exam. Midwives* 1895-6. *Trans.* 8.

1877† LEWIS, JOHN RIGGS MILLER, M.D., Deputy-Surgeon General Markham Lodge, Liverpool road, Kingston hill, Surrey.

1885† LIDIARD, SYDNEY ROBERT, L.R.C.P. Ed., Park View House, Falmouth.

1875† LIEBMAN, CARLO, M.D. Vienna, Principal Surgeon, Trieste Civil Hospital, Trieste, Austria. *Trans.* 1.

Elected

1894 LIVERMORE, WILLIAM LEPPINGWELL, L.R.C.P. Lond., 52, Stapleton Hall road, Stroud green, N.

1872*†LOCK, JOHN GRIFFITH, M.A., 2, Rock terrace, Tenby.

1893† LOGAN, RODERIC ROBERT WALTER, Church street, Ashby-de-la-Zouch.

1859† LOMBE, THOMAS ROBERT, M.D., Bemerton, Torquay.

1894 LOOS, WILLIAM CHRISTOPHER, L.R.C.P. Lond., Mayfield, 10, Hillcrest road, Sydenham, S.E.

1890 LOW, HAROLD, M.B.Cantab., 10, Evelyn gardens, South Kensington.

1893† LOWE, WALTER GEORGE, M.D. Lond., F.R.C.S., Burton-on-Trent.

1890 LUBBOCK, EDGAR ASHLEY, L.R.C.P.Lond., 4, Westfield terrace, Fulham road, S.W.

1878*†LYCETT, JOHN ALLAN, M.D., Gatcombe, Surgeon to the Wolverhampton and District Hospital for Women, Wolverhampton.

1871† MCCALLUM, DUNCAN CAMPBELL, M.D., Emeritus Professor, McGill University; 45, Union avenue, Montreal, Canada. *Trans.* 4.

1890 MCCANN, FREDERICK JOHN, M.B., C.M.Edin., M.R.C.P., Physician to Out-patients at the Samaritan Hospital; 5, Curzon street, Mayfair, W. *Trans.* 2.

1894† MCCAUSLAND, ALBERT STANLEY, M.D. Brux., Church Hill House, Swanage.

1890 MCCAW, JOHN DYSART, M.D., F.R.C.S., Ivy House, Lincoln road, East Finchley, N.

1894† MCDONNELL, ÆNEAS JOHN, M.B. Sydney, Toowoomba, Queensland.

1892† MACKAY, WILLIAM JOHN, M.B., M.Ch. Sydney, 36, College street, Hyde Park, Sydney, N.S.W.

1879† MACKEOUGH, GEORGE T., M.D., Chatham, Ontario, Canada.

1894† MCKISACK, HENRY LAWRENCE, M.D.Dubl., 15, College square east, Belfast.

Elected

1893 MACLEAN, EWEN JOHN, M.D., C.M. Edin., 51, Linden gardens, Kensington, W.

1886 MCMULLEN, WILLIAM, L.K.Q.C.P.I., 319A, Brixton road, S.W.

1894† MCOSCAR, JOHN, L.R.C.P. Lond., Stoneleigh, Watlington, Oxon.

1893 MACPHAIL, ARCHIBALD LAMONT, L.F.P.S. & L.M. Glas., 138, Stoke Newington road, N.

1895† MAIDLOW, WILLIAM HARVEY, M.B.Durh., F.R.C.S.Eng., Taunton and Somerset Hospital, Taunton.

1884 MALCOLM, JOHN D., M.B., C.M., Surgeon to the Samaritan Free Hospital; 13, Portman street, W. *Council*, 1894-6.

1871† MALINS, EDWARD, M.D., Obstetric Physician to the General Hospital, Professor of Midwifery at Mason College, Birmingham; 12, Old square, Birmingham. *Council*, 1881-3. *Vice-Pres.* 1884-6. *Hon. Loc. Sec.*

1868*†MARCH, HENRY COLLEY, M.D., 2, West street, Rochdale. *Council*, 1890-2.

1887 MARK, LEONARD P., L.R.C.P. Lond., 61, Cambridge street, Hyde-park square, W.

1860† MARLEY, HENRY FREDERICK, The Nook, Padstow, Cornwall.

1862*†MARRIOTT, ROBERT BUCHANAN, Swaffham, Norfolk.

1887† MARSH, O. E. BULWER, L.R.C.P. Ed., Parkdale, Clytha park, Newport, Monmouthshire.

1890† MARTIN, CHRISTOPHER, M.B., C.M.Edin., 22, Broad street, Birmingham. *Trans.* 1.

1887† MASON, ARTHUR HENRY, L.R.C.P.Lond., Oakwood, Walton-on-Thames.

1884 MASSEY, HUGH HOLLAND, 3, North terrace, Camberwell, S.E.

1884 MASTERS, JOHN ALFRED, M.D.Durh., 57, Lexham gardens, Kensington, W.

1883† MAURICE, OLIVER CALLEY, 75, London street, Reading. *Council*, 1888-90.

Elected

1890 MAY, CHICHESTER GOULD, M.A., M.D.Cantab., Assistant Physician to the Grosvenor Hospital for Women and Children; 26, Walton street, Pont street, S.W.

1877 MAY, LEWIS JAMES, Bountis Thorne, Seven Sisters road, Finsbury park, N.

1884† MAYNARD, EDWARD CHARLES, L.R.C.P.Ed., Leslie villa, The Vineyard, Richmond.

1891† MAYNER, ALFRED EDGAR, M.D.Montreal, 87, Hanover street, Kingston, Jamaica.

1885† MELLER, CHARLES BOOTH, L.R.C.P. Ed., Cowbridge, Glamorganshire.

1886 MENNELL, ZEBULON, 1, Royal crescent, Notting hill, W.

1882 MEREDITH, WILLIAM APPLETON, M.B., C.M., Surgeon to the Samaritan Free Hospital for Women and Children; 21, Manchester Square, W. *Council*, 1886-8. *Vice-Pres.* 1891-3. *Trans.* 3.

1893 MESQUITA, S. BUENO DE, M.D., B.S.Lond., 11, Highbury New park, N.

1893† MICHIE, HARRY, M.B. Aber., 27, Regent street, Nottingham.

1875*†MILES, ABIJAH J., M.D., Professor of Diseases of Women and Children in the Cincinnati College of Medicine, Cincinnati, Ohio, U.S.

1895† MILLER, JAMES THOMAS ROGER, Castlegate House, Malton, Yorkshire.

1876† MILLMAN, THOMAS, M.D., 490, Huron street, Toronto, Ontario, Canada.

1880† MILLS, ROBERT JAMES, M.B., M.C., 35, Surrey street, Norwich.

1876 MILSON, RICHARD HENRY, M.D., 88, Finchley road, South Hampstead, N.W. *Council*, 1890.

1892† MILTON, HERBERT M. NELSON, Kasr-el-Aini Hospital, Cairo, Egypt.

Elected

1869*†Minns, Pembroke R. J. B., M.D., Thetford, Norfolk.

1867* Mitchell, Robert Nathal, M.D., 27, Fitzjohn's Avenue, N.W.

1894† Mondelet, William Henry, M.D., 1, Gladstone terrace, Brighton.

1893† Montbrun, D. Antonio de, L.R.C.P. Lond., Port of Spain, Trinidad, W.I.

1877 Moon, Frederick, M.B., Bexley house, Greenwich, S.E.

1859† Moorhead, John, M.D., Surgeon to the Weymouth Infirmary and Dispensary; Weymouth, Dorset.

1888 Morison, Alexander, M.D. Ed., 14, Upper Berkeley street, Portman square, W.

1895 Morison, Henry Bannermann, M.B.Durh., 55, York terrace, Regent's park, N.W.

1890 Morris, Charles Arthur, M.A., M.B., B.C.Cantab., F.R.C.S., 29, Eccleston street, Eaton square, S.W.

1883 Morris, Clarke Kelly, Gordon Lodge, Charlton road, Blackheath, S.E.

1893 Morrison, James, L.R.C.P. Lond., St. Bartholomew's Hospital, E.C.

1893† Morse, Thomas Herbert, F.R.C.S., 10, Upper Surrey street, Norwich.

1891 Mortlock, Charles, L.R.C.P.Lond., 27, Oxford square, Hyde park, W.

1886† Morton, Shadforth, M.D. Durham, 24, Wellesley road, Croydon.

1879 Moullin, James A. Mansell, M.A., M.B., Assistant Physician to the Hospital for Women and Children, 69, Wimpole street, Cavendish square, W. *Trans.* 1.

1893 Muir, Robert Douglas, L.R.C.P.Lond., 286, New Cross road, S.E.

1885 Murray, Charles Stormont, L.R.C.S. and L.M. Ed., 85, Gloucester place, Portman square, W.

1893† Murray, Robert Milne, M.B. Edin., 11, Chester street, Edinburgh.

Elected

O.F. MUSGRAVE, JOHNSON THOMAS, L.R.C.P. Ed., 13, College terrace, Belsize park, N.W. *Council*, 1859-60. *Trans.* 1.

1888 MYDDELTON-GAVEY, EDWARD HERBERT, 94, Wimpole street, W.

1893† NAIRNE, JOHN STUART, F.R.C.S. Ed., 197, Pitt street, Glasgow.

1887 NAPIER, A. D. LEITH, M.D. Aber., M.R.C.P. Lond., F.R.S. Edin., Physician to the Royal Maternity Charity; 67, Grosvenor street, W. *Trans.* 2.

1896† NARIMAN, R. T., M.D.Brux., Parsi Lying-in Hospital, Bombay.

1892† NASH, W. GIFFORD, F.R.C.S., 36, St. Peter's, Bedford.

1859† NEAL, JAMES, M.D., Parterre, Sandown, Isle of Wight.

1882† NESHAM, THOMAS CARGILL, M.D., Lecturer on Midwifery in the University of Durham College of Medicine at Newcastle-on-Tyne; 12, Ellison place, Newcastle-on-Tyne. *Council*, 1889-91. *Vice-Pres.* 1895-6.

1859*†NEWMAN, WILLIAM, M.D., Surgeon to the Stamford and Rutland Infirmary; Barn Hill House, Stamford, Lincolnshire. *Council*, 1873-5. *Vice-Pres.* 1876-7. *Trans.* 5.

1889† NEWNHAM, WILLIAM HARRY CHRISTOPHER, M.A., M.B.Cantab., 1, Leicester place, Clifton, Bristol.

1895† NEWSTEAD, JAMES, 9, York place, Clifton, Bristol.

1893† NICHOL, FRANK EDWARD, M.A., M.B., B.C.Cantab., 11, Ethelbert Terrace, Margate.

1873† NICHOLSON, ARTHUR, M.B. Lond., 30, Brunswick square, Brighton.

1894 NICHOLSON, EDGAR, M.R.C.S., 42, Portland road, Notting hill, W.

1879† NICHOLSON, EMILIUS ROWLEY, M.D., 19, Cornwallis gardens, Hastings.

1894 NICOLL, THOMAS VERE, L.R.C.P., M.R.C.S., 147, Cromwell road, South Kensington.

1876 NIX, EDWARD JAMES, M.D., 11, Weymouth street, W. *Council*, 1889-90.

Elected

1882† NORMAN, JOHN EDWARD, Lismore House, Hebburn-on-Tyne.

1883† NUNN, PHILIP W. G., L.R.C.P. Lond., Maplestead, Christchurch road, Bournemouth.

1884† OAKES, ARTHUR, M.D., Warialda, Portarlington road, Bournemouth.

1880† OAKLEY, JOHN, Holly House, Ward's end, Halifax, Yorkshire.

1894 O'CALLAGHAN, ROBERT THOMAS ALEXANDER, F.R.C.S.I., 137, Harley street, W.

1886 OGLE, ARTHUR WESLEY, L.R.C.P. Lond., 90, Cannon street, E.C.

1895† OGLE, JOHN GILBERT, M.D.Oxon., Reigate, Surrey.

O.F.† OLDHAM, HENRY, M.D., F.R.C.P., Consulting Obstetric Physician to Guy's Hospital; Marufa, Boscombe, Bournemouth. *Vice-Pres.* 1859. *Council*, 1860, 1865-6. *Treas.* 1861-2. *Pres.* 1863-4. *Trans.* 1. *Trustee.*

1888 OLIVER, FRANKLIN HEWITT, L.R.C.P. Lond., 2, Kingsland road, N.E.

1889 OLIVER, JAMES, M.D., F.R.S. Edin., F.L.S., Physician to the Hospital for Women, Soho square; 18, Gordon square, W.C.

1884 OPENSHAW, THOMAS HORROCKS, M.B., M.S., 16, Wimpole street, W.

1890† OSBURN, HAROLD BURGESS, L.R.C.P., Bagshot, Surrey.

1877† OSTERLOH, PAUL RUDOLPH, M.D. Leipzic, Physician for Diseases of Women, Diaconissen Hospital; 16, Sidonienstr., Dresden.

1892 OWEN, SAMUEL WALSHE, L.R.C.P.Lond., 10, Shepherd's Bush road, W.

1889* PAGE, HARRY MARMADUKE, M.D.Brux., F.R.C.S., 107, London wall, E.C.

1891† PAGE, HERBERT MARKANT, M.D.Brux., 16, Prospect hill, Redditch.

1883 PALMER, JOHN IRWIN, 47, Queen Anne street, Cavendish square, W.

Elected

1877* PARAMORE, RICHARD, M.D., 2, Gordon square, W.C.

1867*†PARKS, JOHN, Bank House, Manchester road, Bury, Lancashire.

1887 PARSONS, JOHN INGLIS, M.D.Durh., M.R.C.P., Physician to Out Patients, Chelsea Hospital for Women, 3, Queen street, Mayfair, W. *Trans.* 2.

1880 PARSONS, SIDNEY, 78, Kensington Park road, W.

1889 PARSONS, THOMAS EDWARD, Paddock House, Ridgeway, Wimbledon.

1865*†PATERSON, JAMES, M.D., Hayburn Bank, Partick, Glasgow.

1882* PEACEY, WILLIAM, M.D., 11, Breakspears road, Brockley, S.E.

1894 PEAKE, SOLOMON, M.R.C.S., 118, Percy road, Shepherd's Bush, W.

1864 PEARSON, DAVID RITCHIE, M.D., 23, Upper Phillimore place, Kensington, W. *Council*, 1895.

1871 PEDLER, GEORGE HENRY, 6, Trevor terrace, Rutland gate, S.W.

1880*†PEDLEY, THOMAS FRANKLIN, M.D., Rangoon, India. *Trans.* 1.

1881† PERIGAL, ARTHUR, M.D., New Barnet, Herts. *Council*, 1892–3.

1893 PERKINS, GEORGE C. STEELE, M.B., C.M.Edin., 85, Wimpole street, W.

1871† PERRIGO, JAMES, M.D., 53, Union avenue, Montreal, Canada. *Hon. Loc. Sec.*

1879*†PESIKAKA, HORMASJI DOSABHAI, 23, Hornby row, Bombay.

1883 PETTIFER, EDMUND HENRY, 32, Stoke Newington green, N.

1894 PETTY, DAVID, M.B., C.M.,Edin., 6, High road, South Tottenham, N.E.

1879 PHILLIPS, GEORGE RICHARD TURNER, 28, Palace court, Bayswater hill, W. *Council*, 1891.

1882 PHILLIPS, JOHN, M.A., M.D. Cantab., F.R.C.P., Assistant Obstetric Physician to King's College Hospital; 71, Grosvenor street, W. *Council*, 1887-9, 1893. *Hon. Lib.* 1894-5. *Hon. Sec.*, 1896. *Board Exam. Midwives*, 1892-4. *Trans.* 8.

Elected

1891 PHILLIPS, W. E. PICTON, 38, Walsingham House, Piccadilly.

1878 PHILPOT, JOSEPH HENRY, M.D., 61, Chester square, S.W. *Council*, 1891.

1876 PICARD, P. KIRKPATRICK, M.D., 59, Abbey road, St. John's Wood, N.W.

1889† PINHORN, RICHARD, L.R.C.P. Lond., 5, Cambridge terrace, Dover.

1889† PLAYFAIR, DAVID THOMSON, M.D., C.M. Edin., Redwood House, Bromley, Kent.

1893 PLAYFAIR, HUGH JAMES MOON, M.D. Lond., 9, Cliveden place, Eaton square, S.W.

1864* PLAYFAIR, W. S., M.D., LL.D., F.R.C.P., Physician-Accoucheur to H.I. & R.H. the Duchess of Edinburgh; Professor of Obstetric Medicine in King's College, and Obstetric Physician to King's College Hospital, 31, George street, Hanover square, W. *Council*, 1867. 1883-5. *Hon. Librarian*, 1868-9. *Hon. Sec.* 1870-72. *Vice-Pres.* 1873-5. *Pres.* 1879-80. *Trans.* 15.

1880 POCOCK, FREDERICK ERNEST, M.D., The Limes, St. Mark's road, Notting hill, W.

1891 POLLOCK, WILLIAM RIVERS, M.B., B.C.Cantab., Assistant Obstetric Physician to the Westminster Hospital, 56, Park street, Grosvenor square, W. *Council*, 1895-6.

1876 POPE, H. CAMPBELL, M.D., F.R.C.S., Broomsgrove Villa, 280, Goldhawk road, Shepherd's Bush, W.

1891† POPE, HENRY SHARLAND, M.B., B.C.Cantab., Castle Bailey, Bridgwater.

1888 POPHAM, ROBERT BROOKS, L.R.C.P.Lond., 67, Bartholomew road, Camden road, N.W.

1882† PORTER, JOSEPH FRANCIS, M.D., Helmsley, Yorkshire.

1864* POTTER, JOHN BAPTISTE, M.D., F.R.C.P., Obstetric Physician to, and Lecturer on Midwifery and Diseases of Women at, the Westminster Hospital; 20, George street, Hanover square, W. *Council*, 1872-6, 1890-2. *Hon. Lib.* 1877-8. *Vice-Pres.* 1879-81. *Treas.* 1882-4, 1893-6. *Board Exam. Midwives*, 1883-4. *Pres.* 1885-6. *Trans.* 1.

Elected

1894† POUND, CLEMENT, L.R.C.P. Lond., High street, Odiham, Hants.

1893 POWELL, HERBERT EDWARD, Glenarm House, Upper Clapton, N.E.

1884† POWELL, JOHN JAMES, L.R.C.P. Lond., Norwood Lodge, Weybridge.

1885† PRAEGER, EMIL ARNOLD, Rooms 56—57, Potomac Block, Broadway, Los Angeles, Cal.

1886 PRANGLEY, HENRY JOHN, L.R.C.P. Lond., Tudor House, 197, Anerley road, Anerley, S.E.

1893† PRATT, WILLIAM SUTTON, M.D., Alma House, Rugby.

1880* PRICKETT, MARMADUKE, M.A.Cantab., M.D., Physician to the Samaritan Hospital; 27, Oxford square, W. *Council*, 1892.

1895 PRIESTLEY, R. C., M.A., M.B.Cantab., 81, Linden gardens, Bayswater, W.

O.F.* PRIESTLEY, SIR WILLIAM O., M.D., LL.D., F.R.C.P., Consulting Obstetric Physician to King's College Hospital; 17, Hertford street, Mayfair, W. *Council*, 1859-61, 1865-6. *Vice-Pres.* 1867-9. *Pres.* 1875-6. *Trans.* 6.

1893 PROBYN-WILLIAMS, ROBERT JAMES, M.D.Durh., 22, Duke street, Portland place. *Trans.* 1.

1876*†QUIRKE, JOSEPH, L.R.C.P. Ed., The Oaklands, Hunter's road, Handsworth, Birmingham.

1878† RAWLINGS, JOHN ADAMS, M.R.C.P.Ed., Preswylfa, Swansea.

1870* RAY, EDWARD REYNOLDS, Dulwich, S.E.

1894 RAYNER, HERBERT EDWARD, F.R.C.S., 68, Porchester terrace, W.

1860* RAYNER, JOHN, M.D., Swaledale House, Highbury quadrant, N.

1879 READ, THOMAS LAURENCE, 11, Petersham terrace, Queen's gate, S.W. *Council*, 1892.

Elected

1882 ROUTH, AMAND, M.D., B.S., Assistant Obstetric Physician to, and Teacher of Practical Obstetrics and Gynæcology at, Charing Cross Hospital; 14A, Manchester square, W. *Council*, 1886-8, 1896. *Board Exam. Midwives*, 1893-5. *Trans.* 3.

O.F.* ROUTH, CHARLES HENRY FELIX, M.D., Consulting Physician to the Samaritan Free Hospital for Women and Children; 52, Montagu square, W. *Council*, 1859-61. *Vice-Pres.* 1874-6. *Trans.* 13.

1887*†ROWE, ARTHUR WALTON, M.D. Dur., 1, Cecil street, Margate.

1881† ROWORTH, ALFRED THOMAS, Grays, Essex.

1886 RUSHWORTH, FRANK, M.D. Lond., 1A, Goldhurst terrace, South Hampstead, N.W.

1888† RUSHWORTH, NORMAN, L.R.C.P. Lond., Beechfield, Walton-on-Thames.

1886† RUTHERFOORD, HENRY TROTTER, B.A., M.B. Cantab., Park street, Taunton. *Council*, 1892-3. *Trans.* 1.

1895† RUTHERFORD, GEORGE JAMES, L.R.C.P.Lond.; Hastings, St. Leonard's, and East Sussex Hospital, Hastings.

1866*†SABOIA, Baron V. de, M.D., Director of the School of Medicine, Rio de Janeiro; 7, Rua dom Affonso, Petropolis, Rio Janeiro. *Trans.* 2.

1864*†SALTER, JOHN H., D'Arcy House, Tolleshunt d'Arcy, Kelvedon, Essex. *Council*, 1894-6.

1868* SAMS, JOHN SUTTON, St. Peter's Lodge, Eltham road, Lee, S.E. *Council*, 1892.

1886† SANDERSON, ROBERT, M.B. Oxon., 98, Montpellier road, Brighton.

1872 SANGSTER, CHARLES, 148, Lambeth road, S.E.

1891† SAUNDERS, FREDERICK WILLIAM, M.B., B.C.Cantab., Chieveley House, near Newbury.

1872† SAVAGE, THOMAS, M.D., Surgeon to the Birmingham and Midland Hospital for Women; 33, Newhall street, Birmingham. *Council*, 1878-80.

1877 SAVORY, CHARLES TOZER, M.D., 6, Douglas road, Canonbury, N. *Trans.* 1.

Elected

1894† SAVORY, HORACE, M.A., M.B., B.C. Cantab., Haileybury College, Hertford.

1890 SCHACHT, FRANK FREDERICK. B.A., M.D.Cantab., 168, Earl's Court road, S.W.

1870† SCOTT, JOHN, M.D., Cramond House, Sandwich.

1888 SCOTT, PATRICK CUMIN, B.A., M.B. Cantab., 38, Shooter's Hill road, Blackheath, S.E.

1866 SEQUEIRA, JAMES SCOTT, 68, Leman street, Goodman's fields, E., and Crescent House, Cassland crescent, Cassland road, South Hackney, N.E.

1882 SERJEANT, DAVID MAURICE, M.D., 1, The Terrace, Camberwell, S.E.

1875 SETON, DAVID ELPHINSTONE, M.D., 1, Emperor's gate, S.W. *Council*, 1884.

1894† SHARPIN, ARCHDALE LLOYD, L.R.C.P. Lond., 2, Kimbolton road, Bedford.

O.F.† SHARPIN, HENRY WILSON, F.R.C.S., Consulting Surgeon to the Bedford General Infirmary; 1, St. Paul's square, Bedford. *Council*, 1871-3. *Trans.* 1. *Hon. Loc. Sec.*

1887 SHAW, JOHN, M.D. Lond., Obstetric Physician to the North West London Hospital; 34, Queen Anne street, Cavendish square, W. *Trans.* 3.

1891 SHAW-MACKENZIE, JOHN ALEXANDER, M.D.Lond., 24, Savile row, W.

1896† SHEPPARD, WALTER SIDNEY, B.A., M.B., B.Ch.Cantab., Charing Cross Hospital, W.

1890 SILK, JOHN FREDERICK WILLIAM, M.D. Lond., 29, Weymouth street, Portland place, W.

1874† SINCLAIR, ALEXANDER DOULL, M.D., Consulting Physician to the Boston Lying-in Hospital; 35, Newbury street, Boston, Massachusetts, U.S.

1888† SINCLAIR, WILLIAM JAPP, M.D. Aber., Honorary Physician to the Southern Hospital for Women and Children and Maternity Hospital, Manchester; and Professor of Obstetrics and Gynæcology, Owens College, Manchester; 250, Oxford road, Manchester.

Elected

1881† SLOAN, ARCHIBALD, M.B., 21, Elmbank street, Glasgow.

1876† SLOAN, SAMUEL, M.D., C.M., 5, Somerset place, Sauchiehall street west, Glasgow.

1890† SLOMAN, FREDERICK, 18, Montpellier road, Brighton.

1861 SLYMAN, WILLIAM DANIEL, 26, Caversham road, Kentish Town, N.W. *Council*, 1881.

1867* SMITH, HEYWOOD, M.D., 18, Harley street, Cavendish square, W. *Council*, 1872-5. *Board Exam. Midwives*, 1874-6. *Trans.* 6.

1888† SMITH, HOWARD LYON, L.R.C.P.Lond., Buckland House, Buckland Newton, near Dorchester.

1894 SMITH, HUGH ROUBILIAC, M.B.Lond., 7, Gordon street, Gordon square, W.C.

1875 SMITH, RICHARD THOMAS, M.D., Physician to the Hospital for Women, Soho square; 53, Haverstock hill, N.W.

1886† SMITH, SAMUEL PARSONS, L.K.Q.C.P.I., Park Hyrst, Addiscombe road, Croydon.

1882† SMITH, STEPHEN MABERLY, L.R.C.P. Ed., Keerie Kara, Ryrie Street, Geelong, Melbourne.

1879† SMITH, WALTER HUGH MONTGOMERY, L.R.C.P.Ed., 47, London road, West Croydon.

1895 SODEN, WILFRED NEWELL, M.B.Lond., 186, Amhurst road, Hackney, N.E.

1895 SPARKS, CHARLES EDWARD, M.B., B.C., B.A.Cantab., General Lying-in Hospital, Lambeth, S.E.

1868* SPAULL, BARNARD E., 1, Stanwick road, West Kensington, W.

1888* SPENCER, HERBERT R., M.D., B.S.Lond., Professor of Midwifery in University College, London, and Obstetric Physician to University College Hospital; 10, Mansfield street, Cavendish square, W. *Council*, 1890-92. *Board Exam. Midwives*, 1896. *Trans.* 2.

1876† SPENCER, LIONEL DIXON, M.D., Brigade-Surgeon, I.M.S., Bengal Establishment [care of Messrs. Grindlay and Co., 55, Parliament street, S.W.].

1882 SPOONER, FREDERICK HENRY, M.D., Maitland Lodge, Maitland place, Clapton, N.E.

Elected

1876† SPURGIN, HERBERT BRANWHITE, 82, Abington street, Northampton.

1893 STACK, E. H. EDWARDS, M.B., B.C. Cantab., St. Bartholomew's Hospital, E.C.

1894 STEER, ADAM WILLIAM THORBURN, M.R.C.S., L.R.C.P. Eng., 19, Hornsey Rise gardens, N.

1894 STEVENS, THOMAS GEORGE, M.D., B.S. Lond., 1, Newington green, N. *Trans.* 1.

1884† STEVENSON, EDMOND SINCLAIR, F.R.C.S. Ed., Strathallan House, Rondebosch, Cape of Good Hope. *Trans.* 2.

1877† STEPHENSON, WILLIAM, M.D., Professor of Midwifery, University of Aberdeen; 3, Rubislaw terrace, Aberdeen. *Council*, 1881-3. *Vice-Pres.*, 1887-9. *Trans.* 2.

1873 STEWART, JAMES, M.D.

1875*†STEWART, WILLIAM, F.R.C.P. Ed., 26, Lethbridge road, Southport.

1884† STIVEN, EDWARD W. F., M.D., The Manor Lodge, Harrow-on-the-Hill.

1884 STIVENS, BERTRAM H. LYNE, M.D.Brux., 11, Kensington gardens square, W.

1883 STOCKS, FREDERICK, 421, Wandsworth road, S.W.

1894† STOTT, WILLIAM ATKINSON, M.R.C.S., L.R.C.P. Lond., 1, Grove terrace, Leeds.

1866* STRANGE, WILLIAM HEATH, M.D., 2, Belsize avenue, Belsize park, N.W. *Council*, 1882-4.

1895 STUCK, SIDNEY JOSEPH, L.R.C.P.Lond., Chelsea Hospital for Women.

1884 SUNDERLAND, SEPTIMUS, M.D., 35, Bruton street, Berkeley square, W.

1886† SUTCLIFFE, ARTHUR EDWIN, Chorlton Lodge, Stretford road, Manchester.

1883* SUTHERLAND, HENRY, M.A., M.D. Oxon., M.R.C.P., 6, Richmond terrace, Whitehall, S.W.

1888 SUTTON, JOHN BLAND, F.R.C.S., 48, Queen Anne street, Cavendish square, W. *Council*, 1894-5. *Trans.* 2.

Elected

1894 SWALLOW, ALLAN JAMES, M.B., B.S. Durh., 5, Mount Edgecumbe gardens, Clapham rise, S.W.

1896 SWAN, CHARLES ATKIN, M.B., B.Ch.Oxon., 4, Devonport street, Gloucester square, W.

1893 SWAN, RICHARD JOCELYN, Park House, 32, Camberwell new road, S.E.

1893 SWAYNE, FRANCIS GRIFFITHS, M.A., M.B., B.C.Cantab., 4, Belvedere road, Upper Norwood, S.E.

1859*†SWAYNE, JOSEPH GRIFFITHS, M.D., Physician-Accoucheur to the Bristol General Hospital; Harewood House, 74, Pembroke road, Clifton, Bristol. *Council*, 1860-1, *Vice-Pres.* 1862-4. *Trans.* 9.

1892† SWAYNE, WALTER CARLESS, M.B. Lond., 3, Leicester villas, St. Paul's road, Clifton.

1888* SWORN, HENRY GEORGE, L.K.Q.C.P. & L.M., 5, Highbury crescent, N.

1883 TAIT, EDWARD SABINE, M.D., 48, Highbury park, N. *Council*, 1892-4. *Trans.* 1.

1879 TAIT, EDWARD W., 48, Highbury park, N. *Council*, 1886-7.

1871*†TAIT, LAWSON, F.R.C.S., Surgeon to the Birmingham and Midland Hospital for Women; 7, The Crescent, Birmingham. *Trans.* 15.

1880*†TAKAKI, KANAHEIRO, F.R.C.S., 10, Nishi-Konyachō, Kiōbashika, Tokio, Japan. *Hon. Loc. Sec.*

1859 TAPSON, ALFRED JOSEPH, M.B. Lond., 36, Gloucester gardens, Westbourne terrace, W. *Council*, 1862-4. *Vice-Pres.* 1891.

1891 TARGETT, JAMES HENRY, M.B., M.S. Lond., F.R.C.S., 6, St. Thomas's street, S.E. *Council*, 1895.

1892 TATE, WALTER WILLIAM HUNT, M.D.Lond., 4, Queen Anne street, Cavendish square, W. *Council*, 1895-6.

1871 TAYLER, FRANCIS T., B.A. Lond., M.B., Claremont villa, 224, Lewisham High road, S.E.

1869† TAYLOR, JOHN, Earl's Colne, Halstead, Essex.

1890*†TAYLOR, JOHN WILLIAM, F.R.C.S., 59, Bath street, Birmingham. *Trans.* 1.

Elected

1892 TAYLOR, WILLIAM BRAMLEY, 145, Denmark hill, S.E.

1885† TAYLOR, WILLIAM CHARLES EVERLEY, M.R.C.P. Edin., 34, Queen street, Scarborough.

1894† TENCH, MONTAGUE, M.D. Brux., L.R.C.P. Lond., Great Dunmow, Essex.

1890† THOMAS, BENJAMIN WILFRED, L.R.C.P. Lond., Welwyn.

1884 THOMAS, GEORGE H. W.

1887† THOMAS, WILLIAM EDMUND, L.R.C.P.Ed., 2, Station hill, Bridgend, Glamorganshire.

1867*†THOMPSON, JOSEPH, L.R.C.P. Lond., 1, Oxford street, Nottingham. *Trans.* 1. *Hon. Loc. Sec. Council*, 1896.

1878† THOMSON, DAVID, M.D., Park square, Luton, Bedfordshire.

1879 THORNTON, J. KNOWSLEY, M.B., C.M., Surgeon to the Samaritan Free Hospital for Women and Children, 49, Montagu square, W. *Council*, 1882-3. *Hon. Lib.* 1884-5. *Hon. Sec.* 1886. *Vice-Pres.* 1888, 1893. *Trans.* 6.

1873† TICEHURST, CHARLES SAGE, Petersfield, Hants.

1866 TILLEY, SAMUEL, 32, West Kensington gardens, W.

1887† TINLEY, THOMAS, M.D. Durh., Hildegard House, Whitby.

1895† TINLEY, WILLIAM EDWIN FALKINGRIDGE, M.B., B S.Durh., Hildegard House, Whitby.

1879† TIVY, WILLIAM JAMES, F.R.C.S. Ed., 8, Lansdown place, Clifton, Bristol.

1872† TOTOTSCHINOFF, N., M.D., Charkoff, Russia.

1884 TRAVERS, WILLIAM, M.D., 2, Phillimore gardens, W.

1873† TRESTRAIL, HENRY ERNEST, F.R.C.S. Ed., M.R.C.P. Ed., 36, Westbourne gardens, Glasgow, W. *Trans.* 1.

1893† TRETHOWAN, WILLIAM, M.B., C.M. Aber., care of Dr. MacWilliams, Perth, Western Australia.

1886† TUCKETT, WALTER REGINALD, Woodhouse Eaves, near Loughborough.

1865* TURNER, JOHN SIDNEY, Stanton House, 81, Anerley road, Upper Norwood, S.E. *Council*, 1893-4.

Elected

1891 TURNER, PHILIP DYMOCK, M.D.Lond., 95, Cromwell road, S.W.

1881† TUTHILL, PHINEAS BARRETT, M.D., Station Hospital, Gibraltar.

1861 TWEED, JOHN JAMES, F.R.C.S., 14, Upper Brook street, W. *Council*, 1896.

1890 TYRRELL, WALTER, L.R.C.P.Lond., 104, Cromwell road, S.W.

1893 UMNEY, WILLIAM FRANCIS, M.D.Lond., Heatherbell, 15, Crystal Palace park road, Sydenham, S.E.

1874 VENN, ALBERT JOHN, M.D., Physician for the Diseases of Women, West London Hospital; 70A, Grosvenor street, W.

1873* VERLEY, REGINALD LOUIS, F.R.C.P. Ed., St. George's Club, Hanover square, W.

1892† VERRALL, THOMAS JENNER, L.R.C.P.Lond., 97, Montpellier road, Brighton.

1879† WADE, GEORGE HERBERT, Ivy Lodge, Chislehurst, Kent. *Council*, 1892-3.

1894† WAGSTAFF, FRANK ALEX., L.R.C.P. Lond., The Square, Leighton Buzzard.

1860† WALES, THOMAS GARNEYS, Downham Market, Norfolk.

1894 WALKER, THOMAS ALFRED, L.R.C.P. Edin., Greville Lodge, Willesden park, N.W.

1866† WALKER, THOMAS JAMES, M.D., Surgeon to the General Infirmary, Peterborough; 33, Westgate, Peterborough. *Council*, 1878-80. *Hon. Loc. Sec.*

1889 WALLACE, ABRAHAM, M.D. Edin., 39, Harley street, W.

1870 WALLACE, FREDERICK, Foulden Lodge, Upper Clapton, N.E. *Council*, 1880-2.

1872*†WALLACE, JOHN, M.D., Assistant-Physician to the Liverpool Lying-in Hospital; 1, Gambier terrace, Liverpool. *Council*, 1883-5.

1883 WALLACE, RICHARD UNTHANK, M.B., Cravenhurst, Craven park, Stamford hill, N.

1893† WALLS, WILLLAM KAY, M.B. Lond., St. Mary's Hospital, Manchester.

Elected

1879*†WALTER, WILLIAM, M.A., M.D., Surgeon to St. Mary's Hospital, Manchester; 20, St. John street, Manchester.

1867*†WALTERS, JAMES HOPKINS, Surgeon to the Royal Berkshire Hospital; 15, Friar street, Reading, Berks. *Council*, 1884-6. *Trans.* 1. *Hon. Loc. Sec.*

1873† WALTERS, JOHN, M.B., Church street, Reigate, Surrey. *Council*, 1896.

1894 WARD, WILLIAM ALFRED, L.R.C.P. Lond., Middlesex Hospital, W.

1895 WARNER, FREDERICK ASHTON, L.R.C.P., 10, Brechin place, South Kensington, S.W.

1884† WATSON, PERCIVAL HUMBLE, L.R.C.P. Lond., 72, Jesmond road, Newcastle-on-Tyne.

1884† WAUGH, ALEXANDER, L.R.C.P. Lond., Midsomer-Norton, Bath.

O.F.† WEBB, HARRY SPEAKMAN, New place, Welwyn, Herts. *Council*, 1889-91. *Vice.-Pres.* 1892-4.

1893† WEBB, JAMES RAMSAY, M.B., B.S.Melbourne, 82, St. Vincent place south, Albert park, Melbourne.

1894 WEBB, JOHN CURTIS, B.A. Cantab., 14, Cranley place, S.W.

1886† WEBBER, WILLIAM W., L.R.C.P. Ed., Crewkerne.

1893† WEBSTER, THOMAS JAMES, Brynglâs, Merthyr Tydvil.

1887† WELLS, ALBERT PRIMROSE, M.A., L.R.C.P. & S., L.M. 16, Albemarle road, Beckenham.

1876† WELLS, FRANK, M.D., 178, Devonshire street, Boston, Massachusetts.

O.F. WELLS, SIR T. SPENCER, Bart., F.R.C.S., Surgeon in Ordinary to H.M.'s Household; Consulting Surgeon to the Samaritan Free Hospital for Women and Children; 3, Upper Grosvenor street, W. *Council*, 1859. *Vice-Pres.* 1868-70. *Trans.* 5. *Trustee.*

1886† WEST, CHARLES J., L.R.C.P. Lond., The Grove, Fulbeck, Grantham.

1888† WESTON, JOSEPH THEOPHILUS, M.D.Brux., Superintendent of Chenab Central Jail, Chinawan, near Wazirabad, Punjab (care of Messrs. Thacker, Spink, and Co., booksellers and publishers, Government place, Calcutta).

Elected

1886 WHARRY, ROBERT, M.D. Aber., 6, Gordon square, W.C.

1890 WHEATON, SAMUEL W., M.D.Lond., Physician to the Royal Hospital for Children and Women; 52, The Chase, Clapham common, S.W.

1889† WHITCOMBE, CHARLES HENRY, F.R.C.S. Edin., 281, Queen's road, Halifax.

1890 WHITE, CHARLES PERCIVAL, M.A., M.B., B.C.Cantab., 144, Sloane street, S.W.

1890 WHITE, EDWIN FRANCIS, F.R.C.S., Westlands, 280, Upper Richmond road, Putney, S.W.

1882 WHOLEY, THOMAS, M.B. Durh., Winchester House, 50, Old Broad street, E.C.

1877 WIGMORE, WILLIAM, 131, Inverness terrace, Hyde park, W.

1879† WILLANS, WILLIAM BLUNDELL, F.R.C.P. Ed., Much Hadham, Herts.

1889† WILLIAMS, ARTHUR HENRY, M.A., M.B., B.C. Cantab., 54, London road, St. Leonard's-on-Sea.

1887† WILLIAMS, CHARLES ROBERT, M.B., C.M. Ed., 15, Ivanhoe terrace, Ashby-de-la-Zouch.

1894† WILLIAMS, JOHN D., M.D. Ed., B.Sc., 20, Windsor place, Cardiff.

1872 WILLIAMS, Sir JOHN, Bart., M.D., F.R.C.P., Physician-Accoucheur to H.R.H. Princess Beatrice, Princess Henry of Battenberg; Consulting Obstetric Physician to University College Hospital; 63, Brook street, Grosvenor square, W. *Council*, 1875-6, 1892, 1894. *Hon. Sec.* 1877-9. *Vice-Pres.* 1880-2. *Board Exam. Midwives*, 1881-2; *Chairman*, 1884-6. *Pres.* 1887-8. *Trans.* 12.

1890 WILLIAMS, REGINALD MUZIO, M.D.Lond., 95, St. Mark's road, N. Kensington, W.

1881 WILLIS, JULIAN, M.R.C.P. Ed., 64, Sutherland avenue, Maida vale W.

Elected

1860† WILSON, ROBERT JAMES, F.R.C.P. Ed., 7, Warrior square, St. Leonard's-on-Sea, Sussex. *Hon. Loc. Sec. Vice-Pres.* 1878-80.

1892† WILSON, THOMAS, M.D., B.S.Lond., F.R.C.S., Assistant Obstetric Physician at the General Hospital, Birmingham; 33, Paradise street, Birmingham.

1886† WINTERBOTTOM, ARTHUR THOMAS, L.R.C.P. Ed., Lark hill, Swinton, Manchester.

1896† WINTER, JOHN BRADBURY, L.R.C.P, 28, Montpelier road, Brighton.

1877 WINTLE, HENRY, M.B., Kingsdown, Church road, Forest hill, S.E.

1893 WISE, ROBERT, M.D.Edin., 5, Weston park, Crouch End, N.

1887† WITHERS, ROBERT, Stenteford Lodge, Spencer terrace, Lipson road, Plymouth.

1893 WOODROFFE, JOHN FITZHENRY, M.D.Dubl., 48, Mildmay park, N.

1890 WORNUM, GEORGE PORTER, 6, College terrace, Belsize park, N.W.

1876† WORTS, EDWIN, 6, Trinity street, Colchester.

1887† WRIGHT, CHARLES JAMES, Senior Surgeon to the Hospital for Women and Children, Leeds; Professor of Midwifery to the Yorkshire College; Lynton Villa, Virginia road, Leeds.

1888*†WYATT-SMITH, FRANK, M.B., B.C.Cantab., British Hospital, Buenos Ayres.

1871 YARROW, GEORGE EUGENE, M.D., 26, Duncan terrace, Islington, N. *Council*, 1881-3.

1882*†YOUNG, CHARLES GROVE, M.D., New Amsterdam, Berbice, British Guiana.

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The Society is not as a body responsible for the facts and opinions which are advanced in the following papers and communications read, nor for those contained in the abstracts of the discussions which have occurred at the meetings during the Session.

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AGNES HANNAM,
Secretary and Librarian.

OBSTETRICAL SOCIETY

OF

LONDON.

SESSION 1895.

JANUARY 2ND, 1895.

G. ERNEST HERMAN, M.B., President, in the Chair.

Present:—43 Fellows and 2 visitors.

Books were presented by M. Tarnier, Sir Henry W. Acland, the Royal Medical and Chirurgical Society, and Prof. Richard Frommel.

The President nominated Drs. Blacker and C. H. Roberts, and Mr. Lake as Auditors of the accounts for 1894.

Herbert E. Rayner, F.R.C.S., was admitted a Fellow.

The following gentlemen were elected Fellows of the Society:—Samuel Ruddell Collier, M.D., M.Ch., M.A.O., 13, Hartfield Road, Wimbledon; John Curtis Webb, B.A.Cantab., M.R.C.S., L.R.C.P., 14, Cranley Place, S.W.

The following gentlemen were proposed for election:—John Gilbert Ogle, M.D.Oxon.; Arthur King, M.B., C.M., D.P.H.; William Harvey Maidlow, M.B.(Durham), F.R.C.S.Eng.; Henry Percival George Elkington, Surg.-Captain (Army), M.R.C.S., L.S.A.; Samuel Buckley, M.D.Lond., M.R.C.P.Lond., F.R.C.S.Eng.

PYOSALPINX SIMULATING A TUBO-OVARIAN ABSCESS.

Shown by C. J. Cullingworth, M.D.

Dr. Cullingworth exhibited a specimen which he believed to be one of pyosalpinx. It consisted of a thickened and dilated left Fallopian tube, which for six inches of its course (measured from the divided or uterine end) has a diameter of one inch, and then opens suddenly, by an aperture admitting the tip of the finger, into a more or less globular cavity, measuring $4\frac{1}{2}$ inches by $3\frac{3}{4}$ inches. At the time of the operation this cavity contained nine fluid ounces of very offensive pus. There was a small opening, due to perforation, in the wall of the abscess cavity, where it had been in contact with the rectum. Bristles had been placed in this opening and in the opening leading to the narrower portion of the diseased tube.

The patient was 43 years of age and had borne five children, the last one fifteen years ago. She had had no miscarriage. Fourteen years ago she had a serious illness, which was said to be caused by inflammation of the womb, and for which she had to be in bed more or less completely for five months. On her recovery she remained well until September 29th, 1894, when, in consequence, as she thought, of having been obliged to retain her urine for an unduly long time, she was seized with severe pain in the lower part of the abdomen and a general feeling of illness. On the 1st October she sent

for a doctor, and from that time up to her admission on November 23rd had been for the most part in bed. She had had a rigor, with vomiting. Her temperature is said to have varied from 99° to 101°. A swelling gradually formed in the left iliac region. This swelling on her admission was well defined in its outline, reached to a line six inches above the pubes, and gave evidence of fluid contents. The uterus was displaced forwards and to the right. Two days after coming into the hospital there was a sudden discharge from the rectum of four fluid ounces of thick, highly offensive pus. This quantity came away all at one time, there being no further escape of pus. This discharge gave the patient great relief, evidently by removing tension. Four days later abdominal section was performed, and the specimen now exhibited was removed. The operation was of course a prolonged and difficult one. Care was taken that as little soiling of the pelvis as possible should take place. That some should occur seemed inevitable, owing to the communication between the abscess and the rectum. The pelvic cavity was well irrigated and the abdominal incision was entirely closed, no special measures being attempted for closing the opening in the rectum, and no drainage being employed. Dr. Cullingworth had been using drainage much less frequently of late, and the good result in this, which might be almost termed a test case, would encourage him to dispense with its use still more frequently, for the patient was making a most satisfactory recovery, and was now able to walk about the ward.

It might be in the recollection of some of the Fellows that he, Dr. Cullingworth, had exhibited at this Society a little more than two years ago a specimen larger than, but otherwise very similar to that shown to-night, in which the true nature of the abscess was placed beyond doubt by the fact that both the patient's ovaries had been proved to be perfectly healthy, not only by the sense of touch, but by that of sight. He had not evidence of the same unanswerable kind in reference to the specimen before

them, but the two specimens were so much alike that there was practically no doubt as to their being of the same nature. All such cases had hitherto been described as tubo-ovarian abscesses. There had long been a difficulty in his mind in accounting for the apparently direct continuity of the lining membrane of the tube and ovary in some of the alleged specimens of tubo-ovarian abscess. These specimens showed that there was a form of pyosalpinx in which the expansion of the tube was so abrupt as to simulate a tubo-ovarian abscess, and it seemed not improbable that some at least of the specimens at present labelled tubo-ovarian abscess, in which there was no break in the continuity of the lining membrane, would prove on closer investigation to be examples of this retort-shaped variety of pyosalpinx.

Another point of interest in the case he had just narrated was the extraordinarily long period during which the disease had been latent. It was obvious that such a condition of things as was now presented could not have been attained in the two months that covered the period of the patient's last illness. It seemed most probable that the mischief dated from the attack of inflammation fourteen years ago. That attack must have been a severe one, for the patient was more or less bedridden for five months. The legitimate inference was that a pyosalpinx had existed during the whole of the fourteen years that had intervened between the two attacks. It was well known that imprisoned collections of pus might exist for several years in the pelvis without giving rise to symptoms or disturbing the health, but he did not remember any other case in which there had been an entire absence of symptoms for so long a period as fourteen years.

The last point of interest he would mention was the communication between the abscess-cavity and the rectum. He had made no attempt to close or even to search for the opening into the rectum. He had always found that such openings, when not of a tubercular or malignant character, closed spontaneously on the removal of the

source of suppuration. He had so little fear of the establishment of a fæcal fistula in this case that he had not even thought it necessary to use a drainage-tube.

FŒTUS WITH ABSENCE OF URETHRA AND ASCITES OBSTRUCTING DELIVERY.

Shown by Thomas G. Stevens, M.D.

Dr. Stevens showed a specimen of a male fœtus of about seven months with apparently complete absence of the urethra, delivered by embryotomy from a patient under the care of Dr. Griffith at Queen Charlotte's Hospital. The labour was interesting and tedious; the vertex presented, and after four hours' second stage, the forceps were put on and the head delivered (as the fœtus was macerated the neck was broken by the traction employed). Then it was found that the fœtus could not be moved even by considerable traction, and on introducing the hand the pelvis seemed to be filled up completely by the body of the fœtus. An accurate diagnosis could not be made; so the thorax was at once opened with scissors, and on introducing the finger the diaphragm was felt to bulge upwards. This was snipped through with scissors, and three and a half pints of fluid at once escaped, clear and straw-coloured. The fœtus was now easily delivered. The mother made an uneventful recovery.

On opening the fœtus it was found that the bulk of the fluid was ascitic, some was pleuritic and pericardial, and the unopened bladder contained about six ounces. The bladder ended blindly beneath the symphysis, and on dissection of the penis no urethra or corpus spongiosum could be found. A microscopic section of the penis confirmed this, there being nothing but fibrous tissue in the angle between the well-developed corpora cavernosa.

The left ureter was enormously distended and tortuous, but the kidney and pelvis appeared normal in size and structure. The right ureter was very small, the corresponding kidney being atrophied and containing two cysts, one above and one below.

The right hypogastric artery was much larger than the left, the latter as it ran over the bladder being a mere cord, but still pervious. The portal circulation seemed to be normal. The peritoneal cavity was enormously dilated, the intestines and viscera occupying a small space posteriorly, the rest being filled with fluid. The heart appeared normal. The whole fœtus was œdematous, and the proximal portion of the umbilical cord was distended with fluid, probably squeezed in from the peritoneum by the traction employed.

The great interest of the specimen lay in the general œdema and ascites, and absence of great distension of the bladder. The question of the causation of this œdema and ascites was one of considerable difficulty. There seemed to be no adequate reason for believing that a consecutive nephritis from obstruction could cause it, because the kidneys in a seven months' fœtus could only play a subordinate part in eliminating waste products. Dr. Stevens was inclined to think that some mechanical cause must be sought, and in all probability such a cause was accidental. Possibly the hypogastric arteries, in their course over the bladder and through the cord, had become kinked, in the same way that a ureter becomes kinked and produces a hydronephrosis. This kinking would give rise to considerable venous obstruction, and so could account for all the œdema and ascites.

Dr. Peter Horrocks congratulated Dr. Stevens on the successful delivery of the patient. It was rare to find difficulty in delivering the body of the child after the head and shoulders had been born. He mentioned a case he had seen in consultation with Dr. Oram of Wandsworth and another practitioner. The latter was in attendance, and after delivering the head and shoulders he found it impossible to deliver the body. Traction was made until

the cervical spine was broken and the pectoral muscles lacerated. Finally the uterus ruptured, and the patient died. The child was extracted, and its abdomen was found to be of an enormous size. Mr. Targett kindly dissected it, and the specimen was now in the Guy's Hospital Museum. It was a female child, and the urethra, vagina, and rectum were all obliterated, resulting in enormous distension of bladder with urine, of uterus and tubes with fluid of some kind, and of the intestines with meconium. There was no ascites as far as he could remember. The proper way to deliver under these circumstances was to do as Dr. Stevens had done, namely, to open and eviscerate the thorax, to cut through the diaphragm, so letting out ascitic fluid, and then to puncture any cysts that might impede delivery.

The President inquired of Dr. Stevens as to the condition of the placenta, as to whether there was peritonitis, and as to whether there was a history of syphilis. In Dr. Stevens' case there was general dropsy as well as ascites. Sir J. Williams ('Trans.,' vol. xix) had urged strong reasons for the view that general dropsy of the fœtus might be caused by disease of the placenta; that the placenta depurated the fœtal blood, as the kidneys did the adult blood; imperfect depuration in each case leading to dropsy. Fœtal peritonitis was said to be due to syphilis, and if present would account for ascites.

In reply to Dr. Herman's question as to the character of the placenta and the history of syphilis, Dr. Stevens said the placenta had not been weighed, but was a very large one for the size of the child, and presented a peculiar appearance. It was studded all over the fœtal surface with what appeared to be minute vesicles, which gave it a "sandy" feel. There was no history of syphilis.

FŒTUS PAPYRACEUS.

Shown by H. J. Ilott, M.D.

Dr. Ilott gave the following notes of the case:

Mrs. N—, aged 20, primipara, last period early in April, would have been full term about second week in January, 1895. Labour pains and a show set in on the morning of Wednesday, November 28th. I was sent for

on Thursday morning at 2.30 a.m., and found pains frequent and forcing. On examination I found the os fully dilated, and membranes presenting just above the vulva.

Through the unruptured membranes I made out a head and something like small hands or feet; rupturing the membranes, I found that what I felt anterior to the head were the flattened legs and feet of a fœtus of early date. The pains continuing, a fairly well-developed male fœtus, of about seven and a half months' pregnancy, was born, which cried and breathed satisfactorily. On compression of the uterus the placenta and membranes came away readily, and I found attached to them and occupying a separate pocket of the membranes a fœtus of four or four and a half months' pregnancy, which was curiously flattened, but quite free from decomposition. The liquor amnii was clear and not offensive.

The mother and the child have since done well, though the latter is rather feeble, and has a difficulty in sucking the breast. The mother had had no shock or fright, and had experienced good health during pregnancy.

The President said that the papyraceous fœtus belonged to the same teratological class as the acardiac fœtus. In all specimens of this kind one important point was the extent to which the placental circulation was common to both fœtuses. He proposed that a committee should examine the placenta which Dr. Ilott had shown to them, and try if they could determine this. He nominated Mr. Alban Doran and Dr. Giles to form, with Dr. Ilott, the committee.

CANCEROUS UTERUS AND PAROVARIAN CYST REMOVED *PER VAGINAM.*

Shown by Amand Routh, M.D.

Dr. Amand Routh showed a specimen of a uterus with its cervix carcinomatous, and a parovarian cyst re-

moved *per vaginam* from a primipara aged 29. She had been admitted into the Samaritan Hospital, complaining of frequency and pain on micturition for twelve months and a blood-stained discharge for three months. On examination the posterior lip of the cervix was found to be affected with early carcinoma, and there was a hard non-elastic body in front of the uterus, moving with and apparently forming part of the uterus. It was thus diagnosed as a subperitoneal pedunculated fibroid, and it was decided to perform vaginal hysterectomy instead of supra-vaginal amputation of the cervix. The uterus was removed in twenty-five minutes, the ligaments being tied off, and it was found that the tumour left behind was a parovarian cyst. This was pressed down into the vaginal wound, punctured, drawn out, and removed after ligaturing the attachments, the left ovary and tube being also removed. The right ovary was not removed, as it was healthy. The cyst was dotted over with papillomatous nodules on its inner surface. The uterus had a very redundant lining membrane, the menstrual period being due.

The President could from his experience confirm Dr. Routh's statement as to the extreme difficulty of distinguishing small cysts in the broad ligament from uterine fibroids. These cysts were so close to the uterus that they felt as if one with it, and if small, fluctuation could not be detected.

PLACENTA WITH HÆMORRHAGE.

Shown by H. A. Des Vœux, M.D.

PERITONITIS, ITS NATURE AND TREATMENT.

By John Shaw, M.D.,
OBSTETRIC PHYSICIAN TO THE NORTH-WEST LONDON HOSPITAL.

(Received November 14th, 1894.)

This paper was read, but as the Council decided to publish it only in abstract, the author asked for and obtained permission to withdraw it, in order to publish it elsewhere.

ANNUAL MEETING.

February 6th, 1895.

G. Ernest Herman, M.B., President, in the Chair.

Present :—84 Fellows and 13 visitors.

The President declared the ballot open for one hour, and appointed Dr. Giles and Dr. C. H. Roberts as Scrutineers.

Robert Thomas Alexander O'Callaghan, F.R.C.S.I. ; Allan James Swallow, M.B. and B.S.Durh., M.R.C.S., L.R.C.P. ; and Herbert Bellamy Gardner, M.R.C.S.Eng. and L.R.C.P.Lond., were admitted.

Walter Meent Borcherds, M.R.C.S., L.R.C.P. (Cape Colony) ; A. W. Thorburn Steer, M.R.C.S., L.R.C.P. (Penzance) ; John D. Williams, M.D.Edin., B.Sc.(Cardiff) ; and Samuel Ruddell Collier, M.D., M.Ch. (Wimbledon), were declared admitted.

The following five gentlemen were elected Fellows :—John Gilbert Ogle, M.D.Oxon. ; Arthur King, M.B., C.M., D.P.H. ; William Harvey Maidlow, M.B.Durh., F.R.C.S. Eng. ; Henry Percival George Elkington, M.R.C.S., L.S.A. ; Samuel Buckley, M.D.Lond., M.R.C.P., F.R.C.S.

The following three gentlemen were proposed for election :—Edwin Gilbert Emerson Arnold, M.R.C.S.Eng., L.R.C.P.Lond. ; John Davoran, L.R.C.P.I., and C.M. L.R.C.S.I. ; Charles Edward Sparks, M.B., C.B.Cantab.

CASE OF ABSENCE OF UTERUS AND BREASTS.

Shown by Leonard Remfry, M.D.

Dr. Remfry exhibited a drawing and photograph showing the thorax of a patient who had come to the Great Northern Hospital complaining that she had no breasts, and that she did not menstruate. She was twenty-seven years of age, and gave a history of losing some blood from the front passage at the ages of eighteen and twenty-three. Every twenty-eight days she said she had headache lasting one week.

On examination her appearance was neurotic. She looked dazed at times and seemed to easily forget things—such as, for instance, the name of the road she lived in, although after thinking for a minute she was able to give it. The thorax was well covered, but the mammary gland was absent on both sides. There were small nipples. The diameter of the areolæ and nipples together measured ½ inch. The heart and lungs and other viscera were normal. The pelvic measurements were—anterior superior spines 9 ; crests, 10 ; external conjugate, 6½. The internal conjugate could not be determined, but the measurements indicated that there was no flattening of the pelvis. *Per vaginam.*—The external genitals were normal. One finger could be passed through the hymen, which was unruptured. The vagina was conical ; walls smooth. At its apex was a small opening just admitting the sound for ½ inch. *Bimanually.*—A little thickening was felt about the size of a pea, which seemed elastic, and against this the sound could be felt pressing. No ovaries or tubes could be felt,—in fact, the pelvis was just as after removal of uterus and appendages. The sacro-uterine ligaments were distinctly felt *per rectum*, terminating near the small resistance mentioned.

Dr. Champneys had seen the case, and agreed with the diagnosis of the condition.

PATIENT AFTER SYMPHYSIOTOMY.

Shown by W. S. A. Griffith, M.D.

Dr. Griffith exhibited a patient on whom he had performed symphysiotomy in October, 1894, now in robust health, able to do a hard day's work, walk, and jump without pain or difficulty. The only inconvenience from which she suffered was the occasional escape of a few drops of urine when exerting herself. There is no mobility of the pelvic bones, the symphysis is firmly united, and the line of incision through it can be felt as a slight depression one-eighth of an inch in width.

The operation, in spite of the complete recovery of the mother, must be considered as a failure, owing to the fact that the infant could not be resuscitated after delivery by the forceps. It is, however, probable that had it been practicable to operate a couple of hours earlier, this would have been prevented.

It will be in the recollection of the Fellows of the Society that at the discussion on this subject last year there was a general feeling, very clearly expressed by the President, that while evidence is accumulating as to the immediate satisfactory results of the operation, more information is needed as to the after results, especially as to the complete recovery of the patient of her powers of walking, and as to her ability to do hard work. This case, though a single one, is evidence of the kind wanted, and is brought forward without hesitation, because it accords with the evidence obtained by Dr. Griffith in September last as to the results of the operations performed by M. Pinard and M. Varnier, the two chief advocates for this operation in Paris. The operation is not difficult, but is certainly a serious one for the patient, and needs the greatest care in its performance, and is certainly not one to be lightly undertaken at a moment's notice in a private house; but in well-

selected cases, where the contraction of the pelvis is too great to admit of the delivery of the child by forceps or version with a reasonable chance of freedom from serious injury, and not so great as to justify Cæsarean section, it may fairly be adopted, and so obviate the necessity for craniotomy of a living child.

A. M—, aged 32, 1-gravida, was admitted to Queen Charlotte's Lying-in Hospital on October 19th, 1894, in labour. The vertex presented, with the sagittal suture nearly transverse, the occiput to the left, but did not enter the brim; the os admitted two fingers, and the bag of waters was entire; the fœtal heart was natural.

The pelvis was of the simple flattened type, with a true conjugate of $3\frac{3}{4}$ inches.

At 10.30 p.m. the os was sufficiently dilated, but the head had not descended; temp. 99·6°, and pulse 104; the fœtal heart was normal. My colleagues Dr. Pollock and Dr. Gow, and Dr. Herman who had come with me, agreed that it was not practicable to deliver a living child except by symphysiotomy or Cæsarean section, so the former operation was at once proceeded with. The division of the symphysis presented no difficulty; forceps were then applied, and delivery was completed very slowly, the great tension of the soft parts in front necessitating this. The child was born dead, all attempts to resuscitate it proved ineffectual.

The skin wound was closed with silver wire and catgut sutures, and a dressing of cyanide gauze applied. The knees were tied together, and a firm belt applied round the pelvis (this was removed on the second day, as it caused much discomfort).

The patient made an uneventful recovery by November 8th; the divided symphysis seemed to be firmly united, the edges being not more than one-eighth of an inch apart. The highest temperature recorded (taken three times in the twenty-four hours) was 100·2° F.

She left the hospital for the convalescent home on November 22nd.

DERMOID CYST CONTAINING PILL-LIKE BODIES.

Shown by A. C. Butler-Smythe.

Mr. Butler-Smythe exhibited a dermoid cyst with uncommon contents which he had successfully removed in January from a patient aged sixty-five. The tumour contained about two pints of pill-like bodies, some hair, and a pint of dermoid fluid. He promised to bring the case before the Society in detail on some future occasion.

Mr. Alban Doran believed that the meaning of these round pellets of fat in dermoids had never been clearly explained. Rokitansky in 1833 discovered a collection of pellets in a case of twisted pedicle after death, and attributed their origin to the churning action of the dermoid cyst as it rotated. Olshausen doubts this explanation; there had been internal hæmorrhage, and the transuded liquor sanguinis must, he fancies, have broken up a mass of solid fat, which then formed itself into pellets. Mr. Doran was not satisfied with either theory. He had seen numbers of dermoid cysts, and numerous cases of twisted pedicle; indeed, four occurred almost consecutively in his own operative experience last year, yet these pill-like bodies were very rare, he had only seen two cases. He believed that the phenomenon depended on some peculiar constitution of the fat.

In regard to Mr. Bland Sutton's remarks, Mr. Doran thought that the hair-nucleus theory was very reasonable. But it was open to similar objections to Rokitansky's and Olshausen's doctrines. Why, when hair and fat were so common in dermoids, were the pellets so rare? An authority on the chemistry of fats should be consulted.

A committee consisting of Mr. Doran, Mr. Bland Sutton, and Mr. Butler-Smythe was appointed to report on this specimen.

A CASE OF CONGENITAL ABSENCE OF NOSE, RIGHT PALPEBRAL FISSURE, AND RIGHT EAR; IMPERFORATE ANUS, ETC.

Shown by William Duncan, M.D., for J. Davoren, L.R.C.P.Irel.

This interesting fœtus was delivered at full time with forceps (face presentation) on January 2nd, 1895, and survived its birth about twenty minutes. It shows the following remarkable malformations. Complete absence of the nose and right palpebral fissure; the left palpebral fissure is represented by a small slit at the inner canthus, showing a few eyelashes. The right ear and auditory opening absent, and merely represented by a small tubercle. The oral opening is small, and scarcely admits the end of the little finger. The specimen also shows an imperforate anus, and a supernumerary thumb on right hand.

The mother attributes the malformations to a shock she had when three and a half months pregnant, by being told that her next-door neighbour's child had fallen from a window into the street, a distance of forty-five feet, and had the right side of its head and face smashed, and its finger split in two. She describes her sensations at the time as feeling "a cold tremor pass through her like an electric shock." She has four other children fully developed in every respect.

A committee consisting of Dr. Giles, Dr. Duncan, and Dr. Blacker was appointed to report on this specimen.

Report of Committee on Dr. Herbert J. Ilott's Specimen of Fœtus Papyraceus, shown January 2nd, 1895.

The specimen consists of a placenta with two cords; one normal and cut, the other attached to a papyraceous

fœtus. The placenta is common to the two fœtuses. The normal cord is attached marginally, and the placenta on the corresponding side is much thicker than on the opposite side. The cord of the papyraceous fœtus has a velamentous insertion. The corresponding part of the placenta presents a semilunar area, separated from the main mass by a groove, which is deep in the middle and shallow towards the two horns of the crescent. The whole placenta measures $6\frac{1}{2} \times 5\frac{1}{2}$ inches; of this an area of $5 \times 5\frac{1}{2}$ inches forms the portion nourishing the healthy fœtus.

The chorion of the healthy fœtus is not inserted in the groove between the two portions of placenta, but at the margin of the entire placenta. Each fœtus has a separate amnion.

To determine the existence of a vascular communication between the two placental areas, an effort was made to inject the placenta through the vein of the healthy cord. The specimen, having been some time in spirit, was first soaked in plain water for ten days to soften it. A mixture of carmine and gelatine was injected with the help of Dr. Eden, whose assistance in the matter we wish to acknowledge. The injection was, however, unsuccessful, for none of the solution returned through the arteries. Probably the arterioles and capillaries had become so far obliterated by the action of the spirit that they would not allow of the passage of the solution. On cutting into the semilunar portion there was no sign that the injection had penetrated. But, owing to the conditions mentioned, we do not regard this as conclusive against the possibility of vascular communication between the two parts.

On other grounds, viz. the dense character of the placental tissue in the semilunar portion, we regard such communication as unlikely.

The fœtus papyraceus.—The cord of this fœtus, from its velamentous insertion into the amnion to the fœtal umbilicus, measures 11 inches. It is thin and flattened, resembling narrow tape. The fœtus is of the male sex, and measures 8 inches in height from the vertex to the

right heel pulled as straight as possible. The head is flattened symmetrically, preserving the profile of the face. The trunk, extremely flattened, is rotated to the right, the sternum and a portion of the left ribs lying on the right side. There is internal rotation of right humerus; extreme extension and pronation of right forearm; extension of right hand. The left humerus and elbow are apposed to the anterior edge of the flattened trunk; extreme flexion and supination of left forearm, left hand flexed on ulna at a right angle, and touching the mouth with the metacarpal bone of the thumb. The legs, much flattened, are flexed in the position of running, the left being forward. Penis and scrotum well developed.

HERBERT J. ILOTT.
ARTHUR E. GILES.
ALBAN DORAN.

SOME OBSERVATIONS ON THE TEMPERATURE, PULSE, AND RESPIRATION DURING LABOUR AND THE LYING-IN.

By R. J. Probyn-Williams, M.D., and Lennard Cutler, M.R.C.S., L.R.C.P.

(Received November 20th, 1894.)

(*Abstract.*)

The writers have first considered the effect of *labour* on the temperature, pulse, and respiration.

Temperature.—They find that their results coincide with those of Dr. Giles ('Trans.,' 1894).

Pulse.—(1) Rate. They consider the low rate of the pulse after delivery, as given in the text-books, exaggerated. In one hundred cases of normal labour observed in connection with this point, they found that in seventy-six the rate was diminished, in eleven it remained stationary, and in thirteen it was increased after the end of the third stage.

In this series the average decrease between the rates during the first stage, and half an hour after the end of the third, was 11 beats per minute (from 89 in first stage to 78 after delivery).

Parity and the length of the labour have some influence on this fall; and after the administration of chloroform during labour, it is common to find the pulse remaining high after delivery.

In nineteen cases of post-partum hæmorrhage there was an average *rise* of 19 beats per minute (78 during labour, 97 after delivery).

(2) Tension, as estimated by tracings made with Dudgeon's sphygmograph, is usually above normal during labour (1, 7, 19, 25), but is occasionally low, notably in No. 13, in which delivery was followed by considerable hæmorrhage.

Respiration.—After delivery there was, on the average, a fall of one respiration per minute (23 during labour, 22 after delivery). After the administration of chloroform this decrease was not observed.

Lying-in.—Temperature.—The writers found that the average temperature of one hundred cases varied between 98° and 99°, being higher in the evening than the morning (Chart II). The highest average temperature was reached on the first day, and was higher in primiparæ than in multiparæ (Chart I). Rupture of the perinæum had no appreciable effect on the temperature during the puerperium (Chart III).

Pulse.—(1) Rate. They do not agree with the statements in the text-books that the pulse is normally very slow during the first week (see Diagram, from Auvard), but found that the average rate of one hundred cases was never lower than 72 (Chart II). The pulse-rate was faster in the morning than in the evening throughout this series.

(2) Tension. In a few cases (8, 23) the tension is diminished by delivery; but in the majority it is increased (3, 20, 26). Whatever may be the tension of the artery during labour, and whether it rise or fall after delivery, within twenty-four hours it has always increased so much that it is at least as great as, and generally greater than, the tension during labour (3, 9, 14, 7, 24).

This increased tension may persist throughout the puerperium, and commonly lasts longer in multiparæ than in primiparæ (6, 11).

Respiration.—The rate of respiration was found to vary between 20 and 22 per minute. It tends to follow the pulse-rate in being higher in the morning, and not the temperature, which is higher in the evening.

In the accounts of the normal puerperium given in the text-books in general use there occur statements as to the very slow rate of the pulse, and as to other points in

the physiology of this state, which, when we were house physicians at the General Lying-in Hospital, struck us as not representing the condition of, at any rate, the majority of the women confined there.

We therefore began to collect evidence as to what appeared to be the normal in respect of the temperature, pulse, and respiration during labour and the lying-in; and in this note we briefly give the results of our completed observations.

Of course, in many instances we have only to say that our results are in accordance with the usually received ideas; but occasionally we are obliged to differ from what seems to have been handed on from book to book without any attempt on the part of the writer to confirm it by actual experience.

We should here like to thank Dr. Herman and Dr. Dakin for their permission to carry on our investigations.

To make our account as complete as possible we shall first consider the effect of *labour* on the temperature, pulse, and respiration.

Temperature.—In a paper lately read before the Society Dr. Arthur Giles has dealt with the temperature after delivery, especially in relation to the length of the second stage.

The conclusions he draws are—

First, the temperature as a rule rises slightly (to 98·7° F.) during labour.

Secondly, that this rise is somewhat affected by the duration of the second stage, the temperature rising in proportion to the length of it.

Thirdly, that after the administration of chloroform the temperature is commonly low, even if the second stage lasts long.

In the course of our research we have considered our cases as they bore on these points, and have found that our results coincide with his.

Pulse.—This may be dealt with under the two headings of "Rate" and "Tension."

Pulse-rate.—For this purpose the pulse-rate was taken in 100 normal labours during the first stage and about half an hour after the end of the third.

The amount of the decrease in the rapidity of the pulse after delivery, as stated in the text-books, seems to us somewhat exaggerated.

Galabin says "after delivery the pulse falls to a rate below the normal, sometimes as low as fifty or even lower."

Playfair also states that the rate often sinks "to fifty or even forty per minute."

Most other writers give nearly the same figures, some placing the lowest record at thirty-five (Auvard, Blot).

In our cases, compared with its rate during labour, the average of which is eighty-nine, in 76 it was diminished after delivery; in 12 to a rate of seventy, in 25 to from sixty-nine to sixty, in 1 to fifty; in 11 it remained stationary, and in 13 it was increased.

On the average of the whole series the fall in rate was eleven beats per minute (from eighty-nine in the first stage of labour to seventy-eight half an hour after the end of the third stage).

We did not find it follow that where the rate was most accelerated in the first stage there was the greatest fall after the third. Speaking generally, the causes of this fall probably are—a certain amount of relief to the nervous system following delivery, and a diminution in the work of the heart by the cessation of the muscular efforts of parturition, and by the cessation of the placental circulation.

We find that the amount of fall was modified by parity, and by the length of the labour.

Parity.—In our series of cases parity seems to have had some slight influence on the amount of the fall, which is greater in multiparæ, the actual figures being—in 66 multiparæ a fall of twelve beats per minute; and in 34 primiparæ a fall of nine beats.

Length of labour.—In 32 cases (6 primiparæ and 26 multiparæ) in which labour lasted less than ten hours, there was an average fall of eleven beats. In 36 (14

primiparæ and 22 multiparæ) in which labour lasted from ten to twenty hours, a fall of eight beats. In 32 (14 primiparæ and 18 multiparæ) in which labour lasted more than twenty hours, a fall of twelve beats.

We may point out that parity does not influence the fall by means of the length of labour, as in groups 1 and 3, where the fall is greatest, there is no greater proportion of multiparæ than there is in group 2.

We have found that the administration of chloroform also has an effect on the pulse-rate; as out of 58 cases observed, in 20 (34 per cent.) the rate was increased, in 4 (7 per cent.) it remained stationary, and in 34 (59 per cent.) it fell. In those cases in which the rate was diminished the difference between the rapidity before and after delivery was much less than, but in those in which there was an increase it was much more marked than, those cases in which chloroform was not administered. As a result of this, the comparison of the averages (84 during labour, 84 after delivery) shows that the rate does not fall.

To make a general statement without quoting further figures, our examination of these 58 cases shows that we ought not to be surprised if after labour in which chloroform has been administered for any cause, the pulse remains higher than in those cases which have needed no interference.

Rapid pulse in post-partum hæmorrhage.—Sometimes, however, the pulse remains high after labour, in the absence of any immediately obvious cause, such as the administration of chloroform; and in these cases we are usually recommended to be on the look-out for post-partum hæmorrhage. As bearing on this point our figures are —In 11 cases of post-partum hæmorrhage (that is with a loss post partum exceeding 25 ounces) the average *rise* was nineteen beats per minute, the rate during labour being seventy-eight, and after delivery ninety-seven. We have already mentioned that in 13 normal cases the rate was increased, the highest rise being twenty-eight beats, without any excessive loss. Increase of pulse-rate alone

does not therefore necessarily indicate a tendency to post-partum hæmorrhage.

Tension.—In these observations care has been taken to select cases in which there was no evidence of heart disease, or any disease of the kidneys, to affect the arterial tension. The labour was in every instance quite normal, and the tracings in the first stage were always taken during the intervals, and about midway, between the pains. A Dudgeon's sphygmograph was employed with a constant pressure of four ounces; and, to ensure accuracy, two, or sometimes three tracings were always taken.

It is generally accepted that the arterial tension is above normal during labour, and this we find as a rule to be the case (see Nos. 7, 19, 25). The reasons for this increase, which is shown also during pregnancy, are many, the principal being hypertrophy of the left ventricle which has occurred during pregnancy; the increased amount of blood in the systemic arteries, owing to the pressure of the large uterus on the abdominal vessels; and the thickening in the arterial walls, which is said to occur during pregnancy. But we find that in some cases the tension is not increased, but is even subnormal; and this is markedly so in No. 12, a tracing from a patient who subsequently had post-partum hæmorrhage. In No. 16 also it may be remarked that the tension is not so high as usual, but the dicrotic notch is strongly marked.

Pulse in post-partum hæmorrhage.—Let us now consider the question of the rapidity of the pulse in connection with threatening post-partum hæmorrhage. No one will dispute that the cause of this hæmorrhage is want of contractile power in the muscle of the uterine wall, and there is the same want of contractility in the muscle-fibres of the arteries. When, then, the amount of blood in them is diminished by the loss which has occurred during labour, and by the relief of the pressure on the abdominal vessels by the smaller size of the uterus, they are unable to reduce their calibre. The blood, therefore, flows more rapidly along them, and consequently faster in the veins; the

right auricle fills more quickly, and thus the heart has to beat more rapidly to empty itself.

This diminution in contractility will cause a lowering of the arterial tension, and this is what we demonstrate in the tracing (No. 12). If, therefore, during the first stage of labour we find a marked diminution in the arterial tension we should be more on our guard against post-partum hæmorrhage; for if there is want of tone in the arterial walls, we may expect it in the uterine muscles also. We do not wish, however, to assert that a low tension is always followed by post-partum hæmorrhage, as in No. 16 this sequence of events was not observed. In this case the character of the tracing shows that the cause of the low tension is not want of tone in the artery, but probably weakness of the left ventricle. If the low tension is due to weakness of the left ventricle, and not to want of contractility in the arterial walls, we should expect a marked dicrotic notch, and this is well shown in the tracing.

Respiration.—The effect of labour on respiration is not very marked, but there is generally found a slight decrease in frequency when the rate is taken half an hour after delivery, the average of the 100 cases being a fall of one per minute (twenty-three during, twenty-two half an hour after). After the administration of chloroform this decrease is not observed.

Lying-in.

Temperature.—Our observations on the temperature, pulse, and respiration of the puerperium were made on 100 uncomplicated cases. By this we mean that we have excluded cases that have not run the normal course, but have suffered from disease the result of pregnancy, such as eclampsia, or some disease merely complicating pregnancy, as pneumonia or phthisis. The cases were as far as possible consecutive.* We have included all cases with tem-

* Not necessarily identical with the 100 cases of labour.

porary rises of temperature due to constipation, tension of the breasts, and mental excitement. We have only taken into consideration the morning temperature (taken at 9), and the evening (taken at 5.30). The temperature is taken in the mouth before the woman is washed or douched, and at least an hour after any meal.

Lusk, in his 'Science and Art of Midwifery,' following Temesvary and Bäcker ("Studien aus dem Gebiete des Wochenbettes," 'Arch. für Gyn.,' vol. xxxiii), states that the temperature of the puerperal woman does not differ materially from that of the non-puerperal, and our observations lead us to a similar conclusion.

We find that it is not at all uncommon for the temperature to rise during the first twelve hours, the highest point noted in our cases being 100·4°, and this is often maintained for the first twenty-four hours, after which the temperature comes down, usually rapidly.

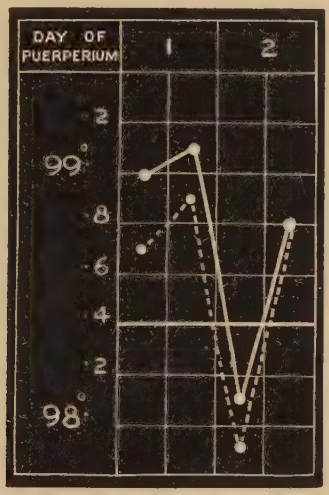
Possibly the cause of this rise is the injury to the genital canal produced during labour, and this rise is much more common in primiparæ, where there is naturally more bruising and laceration.

The accompanying chart (Chart No. I) shows the greater rise in primiparæ, the average of their temperatures on the morning and evening of the first day being 99° and 99·1° respectively, compared with 98·7° and 98·9° in the multiparæ. On the second morning the average temperature of the primiparæ was 98·1°, while that of the multiparæ was 97·9°; but by the evening of that day they had both become 98·8°, and afterwards were identical throughout the puerperium. On taking the average of the 100 cases we find that the temperature ran a very even course throughout the whole puerperium. On no day was it higher than 99° or lower than 98°.

The slight variations are well shown in the accompanying chart (Chart No. II), where there will be noticed that there is a regular evening rise and morning fall, and a gradual descent as the puerperium advances.

Dr. E. S. Tait, in a paper read before the Society

CHART I.



A composite chart to show the greater rise of temperature in primiparæ after labour.

The continuous line represents the average temperature of the primiparæ, the dotted one that of the multiparæ.

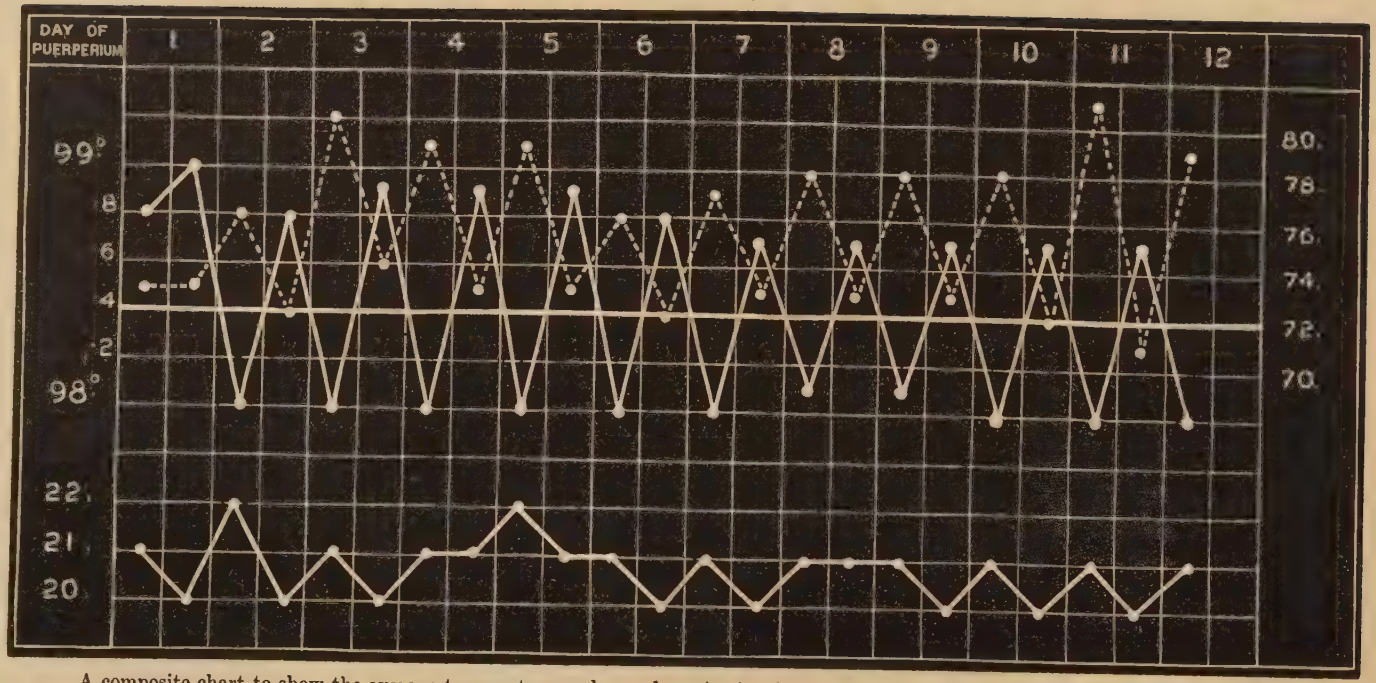
('Trans.,' vol. xxvi), found that the temperature is, as a rule, highest on the third day. Our results do not agree with his, as they show that the highest point is reached on the first day; but it should be remembered that we are only considering the morning and evening temperature, as taken at 9 a.m. and 5.30 p.m., while Dr. Tait has investigated the highest temperature of the twenty-four hours.

Of these 100 cases, four suffered from a rupture of the perinæum requiring one or more sutures. We mention this here as Dr. Tait found that in his series of cases this accident caused a considerable difference in the temperature during the puerperium.

In twenty-three cases of more or less severe tear the average highest temperature was 103·8°; in seven cases of slight tear 102·6°; and in eleven cases of labial tear, 103·7°.

We have collected fifteen consecutive cases of rupture of the perinæum requiring one or more sutures, and find

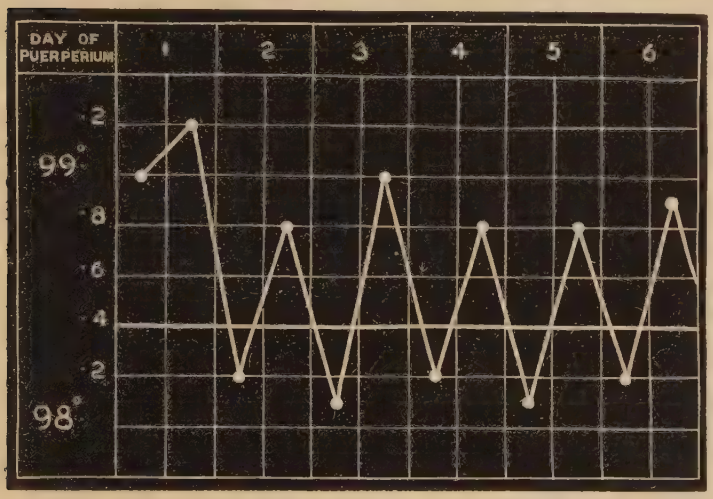
CHART II.



A composite chart to show the average temperature, pulse, and respiration during the puerperium; based on 100 normal cases. Of the two upper curves, the continuous one represents the temperature, and the dotted one the pulse-rate. The lowest curve represents the rate of respiration.

that the average of their temperatures does not differ to any appreciable extent from the normal (Chart No. III).

CHART III.



A composite chart showing the average temperature of fifteen cases in which the perinæum was ruptured during delivery.

To account for this difference we may mention that in Dr. Tait's series Condy's fluid was used for vaginal douching instead of corrosive sublimate, while the nozzles of the syringes were kept in a solution of carbolic acid (1—20); and general antiseptic measures were not so strictly carried out as at present.

Through the kindness of Dr. Griffith we have been enabled to examine the charts of some of his cases at Queen Charlotte's Hospital, and we find that the average of the twenty cases taken differs very slightly from those of the General Lying-in Hospital.

Pulse.—(1) *Rate.*—It is generally held that the pulse-rate is slowed after labour, sometimes reaching as low a rate as 40, and most writers agree that this is what should be expected for the first week or so, with perhaps a slight rise in frequency about the third day.

The following are some of the statements given in the text-books:

"The pulse-rate . . . then rises again, and on the second, third, or fourth day becomes remarkably slowed. The rate then varies between 44 and 70,—indeed, a frequency of less than 40, even of 30, has been noticed; the usual figures are 44, 48, and 56."*

"After delivery the pulse falls to a rate below the normal, sometimes as low as 50, or even lower. Sometimes it is still further diminished on the second or third day, and a rate as low as 40 has been noted. Frequently it regains its usual rate about the third day, but it may remain low as long as a week."†

"This slowing takes place soon after delivery, and lasts for from eight to twelve days, with a momentary interruption about the third day when milk secretion is being established."‡

The diagram (reproduced from Auvard) shows in a graphic form the variations in rapidity which he considers the pulse should undergo; but we cannot help thinking that this is merely a record of his impressions on the subject rather than the result of observation.

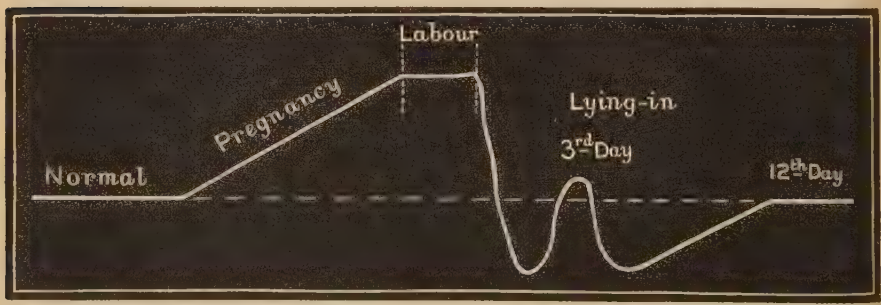


Diagram of the pulse-rate from Auvard's 'Traité pratique d'Accouchements.'

That the pulse is sometimes slow in the beginning of

* Spiegelberg, 'Text-book of Midwifery,' vol. i, p. 289.

† Galabin, 'Manual of Midwifery,' p. 265.

‡ Auvard, 'Traité pratique d'Accouchements,' p. 326.

the puerperium we do not for one moment deny; but we do not find that this is the rule.

In the 100 cases from the General Lying-in Hospital the averages of all the pulses as taken morning and evening are shown in Chart II. Here it will be seen that the average rate is never lower than 72, and is often nearer 80 than 70. Except on the first day, it is always five or six beats faster in the morning than in the evening, thus contrasting with, and, as it will be seen from the chart, having an opposite daily movement to the temperature, which is higher in the evening.

On examining the Queen Charlotte's cases we found that in them 71 was the lowest average rate, but there was not that markedly regular decrease in the evening rate which is noticed in Chart II. This difference is probably due to the fact that the pulses are not taken at the same time in both series, and in the latter the evening pulse is taken at 8 p.m. after the patient has been douched. We have not found one case corresponding in any marked degree to Auvard's diagram; or to the nearly parallel statements made in the text-books referred to.

(2) *Tension.*—Although most observers agree that the arterial tension is raised during labour, there is great difference of opinion as to its condition after delivery and in the puerperium.

Marey states that it is always increased after delivery; but others, as Mayberg ('Archiv für Gyn.,' vol. xii), maintain that it is always diminished.

It is important to avoid confusing the immediate effect of delivery on the tension, and the condition of the pulse when that effect has passed off.

We are of the opinion that the immediate effect of delivery on the arterial tension is in a few cases to diminish it (see tracings 8 and 23), and that this effect lasts about twenty-four hours.

In most instances, however, the contrary happens, and it is actually increased by delivery (see tracings 2, 17, 20, 26).

These differences in the effect of parturition seem anomalous, but there are several factors at work which produce these apparently contradictory results.

The emptying of the uterus allows a large quantity of blood to accumulate temporarily in the portal system of veins, and this is practically withdrawn from the arterial side; and it of course follows that there is a smaller volume of blood distending any particular artery. Then one of two things may occur:

(1) The walls of the arteries and arterioles may contract on to their diminished contents, and although the vessels are smaller in calibre, the tension may remain as high as before, or may even be increased (see Nos. 2, 20, 26).

(2) The vessels may be unable to contract, at any rate quickly, and the tension is that of an imperfectly filled artery, or in other words is lower (see Nos. 8, 23).

Whatever may be the tension of the artery during labour, whether it fall or rise after delivery, within twenty-four hours it has always increased so much that it is at least as great as, and generally greater than, the tension during labour.* This is well shown in No. 14, where although the tension was low both before and after delivery, yet at the end of twenty-four hours it had risen to that seen in the tracing.

The explanation of this rise, as given by Marey, is that the contraction of the uterus after delivery empties its vessels, and the blood contained in them is forced into the general circulation. This constant rise of tension is very striking; but we are unable to give any theory for its causation other than Marey's, which is perhaps hardly satisfactory.

The length of time during which this increased tension is maintained seems to vary very much. In some (Nos. 6 and 11) it was still high when the patient left the hospital on the fourteenth day.

It certainly keeps high longer in multiparæ, possibly on

* See Nos. 3, 9, 14, 17, &c.

account of the greater amount of change in their arterial walls.

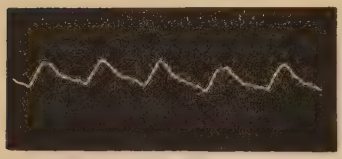
In a paper on "The Indications afforded by the Sphygmograph in the Puerperal State," read before the Society by Dr. Fancourt Barnes ('Trans.,' vol. xvi) the writer shows tracings illustrating the effect of high temperatures, such as that of the so-called "milk fever" in rapidly reducing tension.

That slighter causes may act in the same way is shown by the tracing No. 18, where a slight rise of temperature (99·4°), probably due to constipation, has caused a marked diminution in tension.

Respiration.—We have little to add on the subject of the respiration during the puerperium. Spiegelberg states that the respiratory rhythm is slowed, but we have not found this to be the case. The average of our 100 cases is shown in Chart II, where it may be seen that the rate varies between twenty and twenty-two per minute. It tends to follow the pulse-rate in being higher in the morning, and not the temperature, which is higher in the evening.

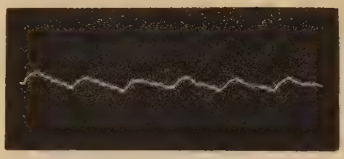
E. G—, aged 30, 5-para.

1.



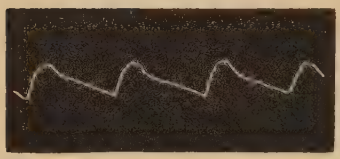
1st stage.
Temp. = 98°; pulse = 88.

2.



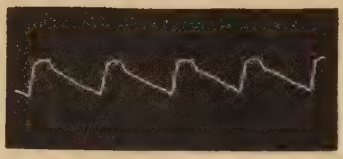
3 hours after delivery.
Temp. = 99°; pulse = 88.

3.



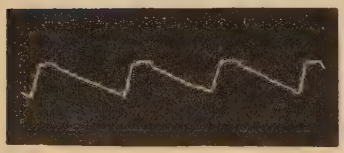
1st day of puerperium.
Temp. = 97·6°; pulse = 68.

4.



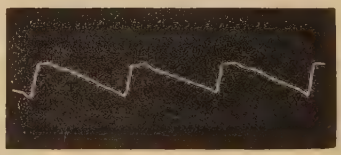
2nd day of puerperium.
Temp. = 98·4°; pulse = 74.

5.



7th day of puerperium.
Temp. = 98°; pulse = 70.

6.



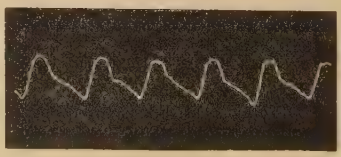
12th day of puerperium.
Temp. = 97·8°; pulse = 76.

M. S—, aged 37, 10-para.

7.

2nd stage.
Temp. = 98°; pulse = 80.

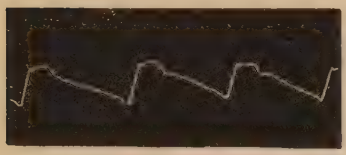
8.



2½ hours after delivery.
Temp. = 98·4°; pulse = 88.

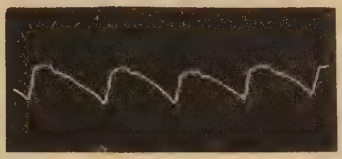
M. S— (*continued*).

9.



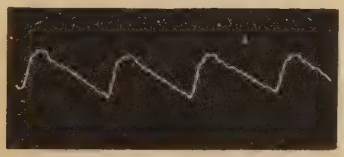
1st day of puerperium.
Temp. = 98·4°; pulse = 80.

10.



2nd day of puerperium.
Temp. = 98°; pulse = 82.

11.

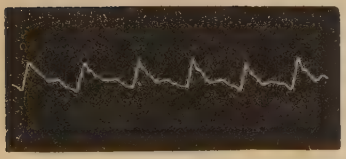


14th day of puerperium.
Temp. = 97·8°; pulse = 68.

E. H—, aged 21, 2-para.

Post-partum hæmorrhage.

12.

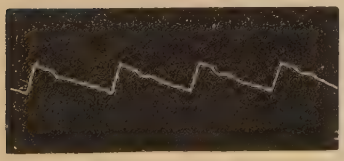


1st stage.
Temp. = 98·4°; pulse = 96.

13.

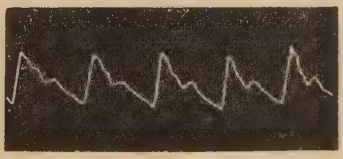
1 hour after delivery.
Temp. = 99·4°; pulse = 84.

14.



1st day of puerperium.
Temp. = 98·4°; pulse = 80.

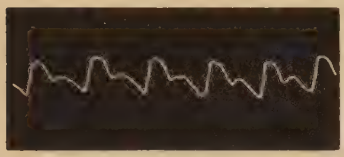
15.



2nd day of puerperium.
Temp. = 98·6°; pulse = 100.

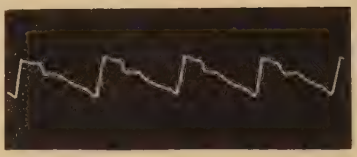
K. M—, aged 25, 3-para.

16.



1st stage.
Temp. = 97·6°; pulse = 98.

17.



16 hours after delivery.
Temp. = 97·8°; pulse = 74.

18.

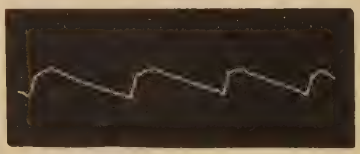
49 hours after delivery.
Temp. = 99·4°; pulse = 102.

J. A—, aged 29, 6-para.

19.

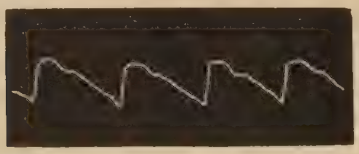
1st stage.
Temp. = 98·8°; pulse = 96.

20.



6 hours after delivery.
Temp. = 98·4°; pulse = 72.

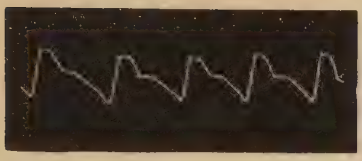
21.



27 hours after delivery.
Temp. = 99·2°; pulse = 80.

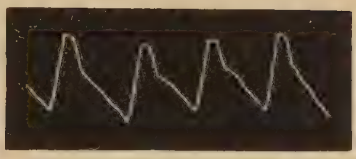
E. G—, aged 21, 1-para.

22.



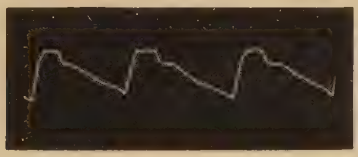
1st stage.
Temp. = 98°; pulse = 84.

23.



11 hours after delivery.
Temp. = 99·6°; pulse = 86.

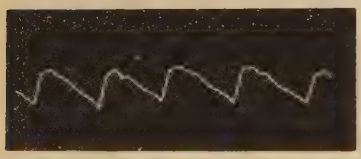
24.



36 hours after delivery.
Temp. = 99°; pulse = 62.

A. P—, aged 20, 1-para.

25.



1st stage.
Temp. = 98°; pulse = 68.

26.

8 hours after delivery.
Temp. = 99·6°; pulse = 60.

Annual Meeting.

The audited balance-sheet of the Treasurer (Dr. Potter) was read.

BALANCE-SHEET OF THE OBSTETRICAL SOCIETY OF LONDON.

(*Abstract of the Receipts and Expenditure for the year ending December 31st, 1894.*)

1894. RECEIPTS.		£ s. d.
To balance from 1893		209 12 1
,, (1) 1 Subscription for 1892		
29 Ditto ditto 1893	= 529 realising	555 9 0
491 Ditto ditto 1894		
8 Ditto ditto 1895		
,, (2) 2 Composition Fees at £10 10*s.*	£21 0 0	
4 Ditto at £5 5*s.*	21 0 0	
		42 0 0
,, (3) Midwives' Examination Fees and Certificate, 5*s.*		432 17 0
,, (4) Sale of 'Transactions' (Longmans) . .	14 16 10	
Do. do. (Society) .	2 8 1	
		17 4 11
,, (5) Interest on Consols . .	47 19 2	
Ditto on Deposit . .	1 18 6	
		49 17 8
Amount of Stock, 2¾ per Cent. Consols, standing in the names of the Trustees . . .	£1800 0 0	
		£1307 0 8

Audited and found correct, February 1st, 1895.

(*Signed*) GEORGE R. LAKE.
C. HUBERT ROBERTS.
G. F. BLACKER.
W. R. DAKIN.

1894. EXPENDITURE.		£ s. d.
By (1) 'Transactions,' Vol. XXXV, Printing, Paper, Binding, Delivery, Engraving, Index, and General Index . . .		345 5 10
,, (2) Library:		
Books Purchased . .	£31 14 0	
Binding . . .	13 19 0	
		45 13 0
,, (3) Museum and Library:		
Rent . . .	200 0 0	
Salary of Librarian .	175 0 0	
Librarian *pro tem.* .	21 2 0	
Commission on Subscriptions . . .	13 19 0	
Repairs to Furniture, Cleaning, Coals, &c. .	28 2 2	
		438 3 2
,, (4) General Meetings and other Expenses:		
Expenses of Meetings .	£19 12 0	
Stationery and Postage .	40 5 4½	
		59 17 4½
,, (5) Examination of Midwives:		
Fees to Examiners . .	206 0 0	
General Expenses . .	52 3 11½	
		258 3 11½
,, (6) Extraordinary Expenses:		
Legal — Messrs. Field, Roscoe and Co. . .	4 0 6	
Expenses in connection with appointment of Secretary and Librarian . .	1 5 8	
		5 6 2
,, (7) Banking Expenses:		
Commission		0 2 5
,, (8) Balance as per Bank Book . .		154 8 9
		£1307 0 8

It was moved by Dr. WATT BLACK and seconded by Dr. CHAMPNEYS—"That the audited report of the Treasurer just read be received, adopted, and printed in the next volume of the 'Transactions.'"

The report of the Honorary Librarian (Dr. Dakin) was then read; after which

Dr. CULLINGWORTH moved and Dr. GODSON seconded—"That the report of the Honorary Librarian be received, adopted, and printed in the 'Transactions.'"

Report of the Honorary Librarian.

I have the honour to report that the additions made to the Library during the past year amount to 130 volumes; of these 37 were donations and 93 were acquired by purchase (volumes 33, tracts in 2 volumes, periodicals 58). The total number of books contained in the Library now reaches 4797.

At a meeting of the Library Committee, April 3rd, 1894, the question of a further distribution of our 'Transactions' was discussed; the Honorary Librarian was deputed to make inquiries; letters were accordingly sent to the more important medical institutions and societies at home and abroad. As a result it was found that a large number of them purchased the volume; the names of the remainder were considered at the June meeting of the committee, and twenty additions were added to the presentation list and five to the exchange list.

The widow of the late Dr. Tilt placed his medical books at the disposal of the Society, from which to select volumes appearing suitable for additions to the Library. Dr. Dakin and the Honorary Librarian selected twelve volumes, for which the thanks of the Society were tendered with a letter of condolence to Mrs. Tilt.

I regret to have to record the death of Mr. Wade Savage, our valued and esteemed Secretary and Librarian for seventeen years: he succumbed after a long illness, October 10th, 1894. His place has been filled by

the election of Miss A. Hannam. During the year 724 Fellows have visited the Library for the purpose of referring to medical literature.

Two works of considerable importance have been acquired by purchase:

(1) *Siebold*—'Histoire de l'obstétricie,' traduit avec additions par F. J. Herrgott, 3 vols., 1893.

(2) *Flügel*—German-English and English-German Dictionary, 4th edition, 3 vols.

By exchange, 'The Johns Hopkins Hospital Reports.'

JOHN PHILLIPS.

The Annual Report of the Chairman (Dr. Champneys) of the Board for the Examination of Midwives was then read.

Report of the Chairman of the Board for the Examination of Midwives.

During 1894 no less than 432 women applied to the Board as candidates for the Society's certificate. This is by far the largest number since the examination was instituted, and nearly 100 more than applied last year; the numbers of 1893 in their turn exceeding those of all previous years.

Of these 432, 390 passed, 40 failed. From 1872 to 1893, 2016 applied, 1672 passed, 323 failed, and 21 were absent.

In all 2448 have applied, 2062 have passed, 363 have failed, and 23 have been absent.

The total number of midwives on the register, including those who passed in January, 1895, is 2166. Four have been struck off the register; one of these was removed in 1894—Margaret Jane Croome,—having been sentenced to ten years' penal servitude for wilful murder.

In consequence of a communication from the General Medical Council, the following circular was sent to all intending candidates:

Midwives' Examination.

January, 1895.

In consequence of the action of the General Medical Council, and until the matters at issue between the Council and the Obstetrical Society are settled, the formal certificate of the Society will not be immediately forwarded to successful candidates; and all candidates presenting themselves must do so on this understanding.

In spite of this, the numbers applying in January were no less than 114, nearly the largest on record.

In retiring from his post, which he has held by the favour of the Society for four years, the Chairman would bear his testimony to the great care exercised by those who have acted as Examiners on the Board to make the examination practical and thorough, while strictly limited in scope. He believes that it is well adapted to the requirements of midwives, or rather of those who employ them, and is, within those limits, searching and highly efficient.

F. H. Champneys.

It was moved by Dr. Potter, seconded by Dr. C. H. F. Routh, and carried unanimously—"That the Report of the Chairman of the Board for the Examination of Midwives be received, adopted, and printed in the 'Transactions,' and that the cordial thanks of the meeting be given to Dr. Champneys, who now retires from the office of Chairman of the Board, which he has so ably filled, and where his loss will be much felt, though tempered by the fact that Dr. Champneys is to go to a higher sphere in filling the Presidential chair."

The President then delivered the Annual Address.

ANNUAL ADDRESS.

Gentlemen,—At the end of last year the number of Fellows of the Society was 741. During 1894 we have lost twenty-four Fellows by death or resignation. We have elected sixty-one new Fellows, making a net gain of thirty-seven; so that we now number 768, the largest total that we have yet reached. Of these 754 are ordinary, fourteen Honorary Fellows.

The Treasurer's balance-sheet has been read. It is a satisfactory one, for the slight diminution in our balance at the bank is due to a larger number of subscriptions than usual being overdue, and not to an excess of expenditure over income.

The report of the Librarian has informed you of the continued growth and utility of our Library, of the lamented death of our late Librarian (of whom I shall presently speak), and of the appointment of his very capable successor.

From that of the Chairman of the Board for the Examination of Midwives you have learned that the Society has continued its work of examining midwives and giving certificates to those found to understand their duties. It began this work in 1872, because those who then undertook it knew that many poor women had lost their lives, many others had suffered much from illness, and many more had been disappointed in their hopes of motherhood, for want of competent attendance during labour. Women unable to pay a doctor's fee had in most places no means of knowing whether a woman who called herself a "midwife" knew anything about a midwife's duties or not, and most such women did not. A few charities trained and certified midwives to attend the patients of these charities; but there was no public body to certify to the competence

of a woman who wished to practise as a midwife in a place in which no charity to which she could attach herself existed. The Society undertook to fulfil this want from a sense of public duty alone. Until 1888 Fellows of the Society gave their services in carrying on these examinations without pecuniary recompense; but by that time the number of candidates had so increased that the duty had become a laborious one, and it was therefore thought just that those who did the work should be paid for it. The Society has never regarded itself as the only body, or even the best body, that could do this work; it did the work because it needed doing, and nobody else would do it. It has always contemplated the discontinuance of its examinations when any better machinery was provided for the attainment of its purpose. That purpose has been simply to inform the public that it had examined certain women as to their knowledge of midwifery, and found them competent to attend natural labour. The wording of the certificate which stated this was carefully considered, with the help of the Society's legal adviser (who is also solicitor to the College of Physicians, and therefore familiar with the Medical Acts), and the Council believed that it expressed this, and nothing more.

During the last session of the General Medical Council that body passed a resolution to the effect that the Society's certificate was a colourable imitation of a diploma qualifying to practise medicine and surgery, and that the issuing of such certificates would in future be considered by the Council as "conduct infamous in a professional respect."

I have recently been told in conversation, and so doubtless have other Fellows of the Society, that our certificate has been used to make people believe that its holder was qualified to practise medicine, surgery, and midwifery; but no instance of such misuse has ever been brought to the knowledge of our Council, nor has even a complaint to that effect been received. Had our Council been shown that this misuse was possible, they would have taken pains

to guard against it. As the General Medical Council has seen fit to condemn the present form of certificate, the Society is now endeavouring to extract from that body some information or advice as to the kind of certificate that in their opinion will meet the public need, and yet not be capable of misuse. I think that the action of the Society in this matter in the past might have led us to reasonably expect that the fault in our certificate would have been pointed out to us, and help given to amend it, before we were condemned unheard, and told that the signature of our officers to the certificate would be considered as, in a technical sense, infamous conduct. The question of the form of the certificate is in itself a very small one; but it was brought to the notice of the General Medical Council by gentlemen whose avowed object is to stop, if they can, the examination and certification of midwives altogether. We do not know whether the General Medical Council approves this aim; and we have no right to attribute to that body any intention which it has not avowed. At present their censure has been expressed upon a purely verbal matter of very small importance.

Passing from this subject, which I think must excite in us rather regret for the position in which the General Medical Council has placed itself than any other feeling, I come to the more grateful task of reviewing the scientific work which the Society has had put before it during the year.

The first branch of inquiry which I have to notice is into *the physiology of the female generative organs.* The Society has had two communications on the physiology of menstruation, and one upon that of the vaginal secretion.

At our meeting in July Mr. Walter Heape gave us a microscopical demonstration of the changes observed in the uterus of *Semnopithecus entellus* during menstruation. Our knowledge of what takes place in the human uterus during menstruation is imperfect. Complete sections of healthy uteri can only be got so long after death that

it is uncertain whether the changes observed are physiological or post-mortem. Uteri are only removed during life on account of disease. Conclusions based on small bits scraped off are evidently liable to much error. Hence the need for calling in the help of comparative physiology. Observations on monkeys had been made by Mr. Bland Sutton, but his were on animals in captivity and in a climate not suited to them. These sources of error account for divergent views, some holding that the endometrium is shed entirely, some that it is shed in part, and others that it is not shed at all.

Mr. Heape's investigation was made upon healthy monkeys leading as natural a life as was compatible with the restraint necessary for observation. He described a cycle of changes which the endometrium of *Semnopithecus entellus* undergoes each month. Starting from what he has named the period of *rest*, there is first growth of stroma beneath the epithelium; then multiplication of the vessels; these hypertrophy, degenerate, and break down, leading to extravasation of blood; these extravasations gradually blend into lacunæ just below the epithelium; then the lacunæ rupture, and blood escapes into the uterine cavity. Lastly comes the menstrual flow, which is a clot consisting of blood, masses of stroma, pieces of uterine glands and capillary vessels, all torn away by the rupture of lacunæ and rush of blood from the vessels. This is followed by recuperation; there is growth of fresh epithelium over the torn surface, the epithelium first being flattened, then becoming columnar; then formation of new vessels in continuity with those already in the stroma, and finally shrinking of the stroma into the "resting stage." The stroma, which is developed from the mesoblast, retains embryonic powers, and can produce from its indifferent elements new epithelium, new glands, and new vessels.

Mr. Heape's most instructive communication to us was a summary of his results, and an exhibition of the actual specimens on which they are based. The full record of

his observations, with the drawings of the specimens, is to be found in the 'Philosophical Transactions,' vol. clxxxv B, 1894, pp. 411—471, and is in our Library.

The other paper relating to the physiology of menstruation was read in July. In it evidence was brought forward that the cervical canal dilates during menstruation. This assertion has often been made, like the opposite one that swelling of the uterine tissues tends during menstruation to occlude the canal; but neither statement has been supported by any evidence until the publication of the paper I have referred to.

The third physiological paper was read at our January meeting by Dr. Gow. Part of the secretions present in the vagina, every one knew, came from the uterus. We had no exact knowledge of the characters of the secretions which the vagina itself produces, and it had even been denied that the vagina secreted at all, on the ground that certain observers had failed to find glands in it. Dr. Gow investigated this question by well-devised experiments. He showed that the vagina does secrete, the secretion being a transudation from its wall with separation of epithelium; that the secretion contains an albuminous substance, but very little mucin, and therefore cannot be described with literal accuracy as mucus; that it is alkaline when secreted, but is quickly decomposed and made acid by micro-organisms. This paper has made our physiological knowledge more precise and accurate.

The diseases of pregnancy.—Mr. Bland Sutton showed at our June meeting an early tubal ovum which had ruptured into the peritoneal cavity. Mr. Sutton gave good reasons for believing that the blood forming a tubal mole is furnished by the ovuline, not by the maternal vessels—an important point, as indicating fœtal death from disease of the fœtus itself, not from separation of the chorion from the mother's tissues. Mr. Sutton's reasons were two: (1) that the blood was in the space between the chorion and the amnion; and (2) that the blood-corpuscles in this space were nucleated. It is to be hoped that those who

have opportunities will examine carefully tubal and other moles to ascertain whether Mr. Sutton's observation represents the rule or the exception. If intra-uterine death from conditions of the fœtus can be distinguished from that due to conditions of the mother, great light may be thrown upon ante-natal pathology. Mr. Sutton's observation is therefore an important one.

Dr. Duncan in February showed a tubal gestation successfully removed three hours after rupture, and Dr. Scott in December one removed with success twenty-seven hours after rupture. Dr. Eden in January exhibited a tubal mole removed by Dr. Schacht before rupture, and showing the peculiarity that the tube was dilated to an extent greater than that required by the ovum, thus suggesting that pregnancy had taken place in a tube the cavity of which had already been enlarged by disease. In April Dr. Duncan showed a fœtus and placenta removed by abdominal section at about five months' pregnancy. The placenta was removed, and bleeding arrested by plugging with iodoform gauze. The patient died; there was slight peritonitis, but the nature of the symptoms led the operator to think that death was due to iodoform poisoning. Experience is yet insufficient to prove what is the best method of dealing with the placenta in advanced ectopic gestation; and credit is due to Dr. Duncan for publishing an unsuccessful as well as his successful cases.

Dr. Griffith in November related a case which showed that the passage of a large and thick uterine decidua is not, as has been supposed, conclusive as to ectopic pregnancy. In Dr. Griffith's case there was a history of amenorrhœa, morning sickness, and enlargement of breasts, in a nullipara married two years, who passed a large, thick, decidual cast. The patient was so fat that a satisfactory examination was impossible. The history, and the presence of this sign, supposed to be pathognomic, led Dr. Griffith to advise an exploratory operation, which furnished proof that no pregnancy existed. Dr. Griffith suggested that there might have been a pregnancy which had ended

in the death and absorption of the ovum. Whatever the explanation, it is clear from this case that the passage of a large and thick decidua is not by itself a proof of a condition calling for operation, and, as demonstrating this, the case is instructive and unique.

Dr. Remfry in October showed a specimen in which tubal pregnancy had ended in death of the fœtus, tubal absorption, and subsidence of all symptoms. But five weeks afterwards febrile symptoms developed, and an operation was done, which showed that suppuration was commencing in the tube. This is an important case, as showing that a tubal mole is not a quite harmless condition. Some of us who have removed tubal pregnancies in which active growth had evidently ceased must sometimes have felt uneasy as to whether we had not inflicted an unnecessary operation upon the patient. Dr. Remfry's case goes to show that even if a tubal pregnancy has ended in the formation of a mole, it is better to remove it.

A later stage of a condition clinically identical with ectopic gestation was illustrated by a specimen exhibited by Dr. Remfry in October, of gestation in a rudimentary uterine horn. In this the fœtus had died long ago, its soft parts had been absorbed, and the enlarged cornu containing fœtal bones formed a tumour which caused much pain, and from its hardness, roundness, and attachment to the uterus was taken, as all such tumours have been taken, for a fibroid.

The attention of the Society in January was invited to the renal diseases dependent upon pregnancy, when six cases of pregnancy and labour with Bright's disease were reported to it; and again in May, when Mr. Cutler showed the kidneys from a case of eclampsia, and gave a complete report of the case. It illustrated several points about this disease, the chief one being that the changes in the kidneys resembled those of blood-poisoning rather than those of inflammation.

At our meeting in May Dr. Braxton Hicks put before

us a paper on "the intermittent contractions of the uterus with fibromata and in pregnancy in relation to diagnosis;" a paper of interest as coming from the discoverer of this sign. Unfortunately the activity of an editor secured this paper for a medical journal; and therefore, by the rules of the Society, our 'Transactions' only contain a reference to the place of its publication instead of the paper itself. In it Dr. Hicks gives his ripe experience as to the value of this sign, which many years ago he first taught the profession.

Dr. Blacker in June showed the uterus of a woman who died from a cerebral tumour, being in the eighth month of pregnancy with placenta prævia marginalis. The opportunities of anatomical examination of this condition are rare. Dr. Blacker availed himself of his, and gave us a full and exact description of the specimen.

Papers concerning labour.—A rare termination of concealed accidental hæmorrhage was exhibited in November by Dr. Dakin. The effused blood had completely stripped off the placenta, and the whole contents of the pregnant uterus—fœtus, placenta, and membranes—were expelled entire.

At the same meeting Dr. Farrar related two cases in which the cervix uteri, notwithstanding two or three days of strong and frequent pains, did not dilate; but the application of cocaine to it was followed by expansion in a few minutes. Our knowledge of the conditions upon which the duration of labour depends is at present almost limited to the mechanical effects of the dilating forces and the resistances. We know hardly anything of the nervo-muscular conditions upon which the strength, duration, and frequency of pains and the quickness of dilatation depend. While our knowledge is so limited, we cannot say from two cases whether what Dr. Farrar observed was coincidence or cause and effect. The two cases are remarkable and suggestive; and if similar ones should be reported by other observers, Dr. Farrar will have made a valuable addition to our resources.

Symphysiotomy was the subject of discussion at the March meeting of the Society. It was brought before us by a paper from Dr. R. P. Harris of Philadelphia. By personal inquiry he had obtained the results of thirty-one symphysiotomies performed in America; and he prefaced these by a summary of the history of the operation in Europe. The general tenor of the discussion showed that at present the operation is not so unreservedly accepted as the proper mode of delivery when the forceps fails, as its enthusiastic advocates think it should be. I think it established that by symphysiotomy a child can be delivered alive that without it would be born dead, and that the risk to the mother's life is small. It is probable that if the operation continues to be extensively practised this risk will be still further diminished. The one thing wanted to justify frequent resort to the operation is information as to the future of the pubic articulation. If the operation makes the patient bedridden for life, that is a result nearly as bad as if it killed her; and if, though able to stand and walk, she is robbed of the physical strength which she formerly enjoyed, the result is not much better. We were told in the discussion that in at least one case the former result had followed; and the latter seems to be much too frequent.

Dr. Blacker in November reported to us an instance of one of the accidents which symphysiotomy is designed to prevent, viz. rupture of the uterus. His description was concise, full, and exact.

Three contributions during the year have had reference to *the puerperal state*—one paper and two specimens.

Dr. Giles favoured us in July with another of his valuable contributions to the clinical history of childbed. The terrible febrile diseases which are caused by inoculation of septic germs into puerperal wounds, and the abolition of these diseases by antiseptics, have so overshadowed minor disturbances in the puerperal state that we have comparatively little knowledge about the latter. Dr. Giles in this paper demonstrated that prolongation of

the second stage of labour slightly raises the temperature after delivery; and that this rise of temperature is less when chloroform is given. The rise of temperature he thought due partly to the effect of prolonged pain and anxiety on the nervous system, and partly to the damage mechanically inflicted on the soft parts. Chloroform lessens the first effect by producing anæsthesia, and the second by taking off the force of the abdominal muscles. Dr. Giles also showed that an intra-uterine douche slightly raises the temperature. This he attributed partly to the effect on the nervous system of an unlooked-for addition to the ordinary process of labour, and partly to direct warming by the douche. I suggest that the temperature may also be raised by the condition which called for the douche. Dr. Giles's paper adds to our knowledge of the puerperal state.

Dr. Probyn-Williams at our February meeting showed an abscess between the bladder and abdominal wall, formed probably a month, and possibly longer, before delivery, bursting into the bladder, and causing death on the fourth day after delivery. Dr. Chepmell in January exhibited the reproductive organs of a patient who had died from puerperal peritonitis. This instructive specimen showed a gangrenous condition of tears in the perinæum and cervix, but that the Fallopian tubes were only inflamed at their peritoneal ends. It was clear, therefore, that infection had taken place through the lymphatics, and not along the mucous surface. The history showed that a midwife had carried the infection from another patient.

Numerous *specimens of teratological interest* have been brought forward. Dr. Remfry in July described and commented on a specimen of retroflexion of the fœtus. Two conditions were present in it, either of which, in Dr. Remfry's opinion, might account for the retroflexion; viz. (*a*) shortness of the cord, and (*b*) defective development of vertebræ. There was spina bifida, and the anal involution had not joined the gut. But the unique point of the specimen was that the causes which early in

pregnancy had produced retroflexion of the fœtus seemed to have affected only the splanchnopleure layer of the mesoblast, not the somatopleure; so that the sheet of muscle developed out of the latter embryonic layer had become so displaced that the gluteus maximus was attached to the occipital bone. Dr. Leith Napier showed a fœtus with celosome, retro- and lateri-flexion of the fœtus, meningocele, and talipes varus. Drs. Dakin and Giles were associated with Dr. Napier in a committee, and examined it. They reported that the deformity was due to non-development of an umbilical cord from the allantoic stalk, the belly of the fœtus being in consequence fixed to the uterine wall. But the site of the retro- and lateri-flexion had been determined by imperfect development of vertebræ, for it was most marked where the vertebræ were most deficient, not where the attachment to the uterus was closest.

Drs. Giles and Probyn-Williams exhibited in May an exomphalic fœtus, also showing imperforate anus and spina bifida. The specimen was fully described, the production of the deformity explained, and the relation between the exomphalos, the spina bifida, and the imperforate anus pointed out. Dr. Probyn-Williams showed in January a malformed heart—two ventricles and only one auricle,—since more fully described in the 'Journal of Anatomy and Physiology,' and a case of hydrocephalus.

Dr. Grogono exhibited in February an acardiac fœtus, and assisted Dr. Giles and Mr. Bland Sutton in reporting upon it. Decomposition had advanced too far for examination of the soft parts; but a drawing of the skeleton by Dr. Giles appears in our 'Transactions,' which will assist future investigators of this class of monsters. A case of Cyclops was shown in April by Dr. Ettles, and a committee appointed to report upon it, but the report has not yet been laid before us.

Dr. Roberts showed in December a living specimen presenting the deformities generally supposed to be due to intra-uterine amputations. Mr. Targett at our October

meeting put before us photographs of two cases of pseudo-hermaphroditism. One was of female configuration, dressed as such, and menstruated, but had a large clitoris, hernial ovaries, and perverted sexual instincts, these being towards women. The other was a young woman of masculine build, passing as a man, who had never menstruated, and who had a clitoris like a hypospadic penis, but who had the small vagina of an immature female.

The *diseases of the ovary* have been illustrated by a valuable paper and by several specimens. The paper was by Dr. Cullingworth, who in it related three cases of abscess of the ovary, the suppuration having reached the ovary by spreading from the tube. The author called attention to the great frequency of ovarian suppuration; out of eighty-three abdominal sections for pelvic suppuration other than cellulitic, in no less than thirty there were suppurating cavities within the ovary. In the discussion Dr. Galabin related cases in which pus was present in the ovaries, although at the time of operation there was no visible sign by which its presence could be ascertained. He agreed with Dr. Cullingworth that suppuration might extend from the tube to the ovary; and that as unsuspected foci of suppuration might be present in the ovary, it was better if suppurated tubes were removed to take away the ovaries also. In the first two of Dr. Cullingworth's cases I can see no room for doubt, not only that the operation saved life, but that life could have been saved in no other way. In the third case, in which the pus bulged down Douglas's pouch and displaced the uterus forwards, it seems to me less clear that a difficult and dangerous abdominal operation was the best thing; an incision in Douglas's pouch would have let out the pus, and might have cured the patient. I cannot agree with one speaker, who said that in any case in which pelvic suppuration is suspected the proper treatment is to perform abdominal section.

Specimens have been brought forward of rare forms of ovarian tumours. Dr. Dakin showed at the November

meeting a sarcoma of the ovary upwards of 9 lbs. in weight. Dr. Dakin's specimen elicited from Dr. Cullingworth mention of another case. In both these cases marked improvement in health followed removal of the sarcoma, lasting in the latter case at least three years and a half. Dr. Horrocks in June exhibited a solid tumour, measuring 10 inches by 12, removed from a girl of twenty-two, which microscopically was found of a structure hard to pronounce upon, whether fibroma or sarcoma. Dr. Horrocks inclined to the latter. He also showed a rapidly growing tumour of the ovary removed from a woman of fifty, thought to be sarcoma, although it had not been microscopically examined. At our June meeting Dr. Crawford showed a tumour of the ovary weighing 6¼ lbs., taken post mortem from a patient who had committed suicide. Microscopic examination showed it to be a pure fibroma. Dr. Crawford gave references to some other instances of this rare new growth. The accidents to which ovarian tumours are liable were illustrated by two specimens exhibited by Dr. Duncan. In one of them a cyst was felt to rupture during examination, and was removed an hour and a half afterwards. The other was a dermoid cyst with a twisted pedicle.

So-called cirrhosis of the ovary, a disease often supposed to be sufficient explanation of pelvic pain, and for which many ovaries have been removed, was the subject of a paper read to us in November by Dr. Braithwaite. He urged that it was not a fibroid growth, but a collapse, from atrophy due to conditions of debility; and that when fibroid growth did take place the ovary was swollen. The specimens upon which the paper was based had been examined and described with unusual care; but neither Dr. Braithwaite nor anyone else that I know of have given us any criteria by which, given two small ovaries, anyone can distinguish one which was painful from one which was not painful. Mr. Malcolm in the discussion referred to two small ovaries which had been carefully examined by Mr. Targett, and showed all the signs of so-

called "cirrhosis," but they were removed in the course of an ovariotomy from a patient who had no pain whatever.

Dr. Remfry in May exhibited two ovaries showing a rare pathological change, viz. enlargement, with very deep sulci; a condition out of which Nagel has shown that cysts may develop. Unfortunately, owing to the imperfection of our machinery for getting good reports on pathological specimens, this one is only mentioned, not described, in our 'Transactions.'

At our meeting in April a paper was read by Dr. Amand Routh on cases of associated parovarian and vaginal cysts formed from a distended Gartner's gut. The author related a case in which a vaginal cyst communicated with a cyst in the broad ligament. It suppurated, and after being opened and drained, healed up. He quoted from other writers two similar cases (the only ones to be found), and gave as their explanation that the cysts were formed out of the remains of Gartner's duct. To illustrate the difference between these cysts and a condition resembling them, Dr. Routh next described a case of double uterus and vagina, imperforate on one side, a condition in which, as in the cyst of Gartner's duct, there was another cavity by the side of the vagina and uterus. Dr. Routh then summarized the observations made by others on the patency of Gartner's duct in the adult. He drew the general conclusion that in some cases Gartner's ducts can be traced in the adult from the parovarium to the vestibulum vulvæ, ending beneath and a little to one side of the urethral orifice. Gartner's duct is the homologue of the vas deferens; and Dr. Routh pointed out that homology suggests, though it has not yet been proved, that Skene's ducts lead from Schüller's glands, and that Schüller's glands are diverticula from Gartner's duct, bearing the same relation to it that the vesiculæ seminales do to the vas deferens. He showed that a patent duct of Gartner may form a tumour resembling a parovarian cyst, or a vaginal cyst, according to the part of the duct which is distended; or a tumour

in both places, as in his own case. The opening of such a cyst may explain some cases of persistent watery discharge not accounted for by any other condition of vagina or uterus. The right treatment of such cysts was to lay them open from the vagina and drain them, not to attempt to remove them. Dr. Routh added to his paper a full bibliography of the subject.

Dr. Routh's paper is, I think, the best account from a clinical point of this difficult subject that has yet appeared. The subject is difficult because cases which throw light on it are so rare. It is fortunate that Dr. Routh's case fell into the hands of one competent to perceive what it had to teach.

Another rare tumour was exhibited by Dr. Duncan at our October meeting, viz. a sarcoma of the omentum, into which three quarts of blood had been effused, causing it to give the physical signs of a cyst. The patient was in good health five months after its removal. Another very rare specimen was shown at the November meeting by Dr. Cullingworth, viz. primary cancer of the Fallopian tube. It was removed along with a multilocular ovarian cyst. The patient lived ten days short of a year afterwards. In discussing it Mr. Doran enumerated to the Society all the hitherto recorded cases of this rare disease.

Three papers have been read relating to *uterine disease.* The subject of hysterectomy for cancer of the uterine body was brought under our consideration by Dr. Lewers in December. This subject was last discussed in 1885. At that date the mortality was so high that there was difference of opinion as to whether the operation was in any cases justifiable. Now the operation is performed in every civilised country; the mortality has sunk to about 5 per cent., and the percentage of cures according to the most recent statistics is about 20 per cent. For the cure of the disease the first thing is early operation. Early operation requires early diagnosis; and early diagnosis must sometimes mean doubtful diagnosis. It is a rule of surgery that where there is a reasonable suspicion, though

not absolute certainty, of cancer, the wisest course is to remove the suspected part. If this rule is acted on, it follows that every large collection of cases will contain some in which the disease was not cancer, although the decision to operate may have been wise; and the possible inclusion of such cases must suggest doubt as to whether recovery with permanent good health is really cure of cancer. Dr. Lewers brought forward, with a view of removing this doubt, a case in which there was no doubt of the malignancy of the disease, or of the patient's good health for at least two years afterwards. He referred briefly to five other cases in which the diagnosis was also indisputable, but the patients had not been watched for so long.

Two other papers relating to diseases of women were read in June. Dr. Remfry related a case in which he had tied the upper part of the broad ligaments for a bleeding fibroid, the ovaries being embedded in such dense adhesions that they could not be got out. The operation produced amenorrhœa lasting two months, and then bleeding recurred. The ligature of the whole or part of the broad ligaments for uterine fibroids has been practised a good deal in Germany and America to stop the growth of fibroids and the troubles resulting from them; and it has been proposed to do it to stop the growth of cancer. It is well, therefore, that cases such as Dr. Remfry's, in which this has been done, and the subsequent course of the case watched, should be put on record. Dr. Braithwaite read a paper on a case in which adenomatous growth of the cervix, instead of being as usual raised, was depressed—a circumstance which gave rise to difficulty in diagnosis.

Specimens have been shown exemplifying occasional difficulties in the diagnosis of *uterine fibroids*. In July Dr. Stevens showed for Dr. Horrocks a fibroid which had rapidly enlarged, gave a thrill on palpation, and was taken for an ovarian cyst. At the operation the tumour was found to be uterine. But even then it felt as if it contained solid lumps floating in fluid, a feature which suggested pregnancy. But the uterine cavity after dila-

tation was found to be empty. The mass was therefore removed by hysterectomy, and proved to be a fibro-myoma in the anterior wall, with large areas of mucoid substance in it. Dr. Lewers at our October meeting showed a fibro-cystic tumour of the uterus so thin-walled that it was taken for an ovarian cyst, and reconsideration of the case in the light of the knowledge gained at the operation failed to show any way in which the mistake could have been avoided.

The changes in uterine fibroids which endanger life were exemplified by a specimen shown by Mr. Malcolm at our June meeting: two fibroids removed a week after a miscarriage. The miscarriage was followed by fever. The abdomen was opened and the fibroids found to be sloughing. Immediate improvement and ultimate recovery followed the timely resort to surgery. Dr. Cullingworth exhibited in October a fibroid which had become gangrenous, although it had not been meddled with and was entirely interstitial, and therefore apparently inaccessible to microbes. The patient was aged sixty-one, and was known to have had the fibroid for twenty years. The case showed, as Dr. Cullingworth pointed out, that fibroids do not cease to be a source of danger when the menopause has arrived. Dr. Duncan in May showed a specimen taken from a woman who had a gangrenous fibroid protruding through the cervix into the vagina. This mass was removed, and a gangrenous fibroid felt within the uterus. The uterus was therefore removed by abdominal hysterectomy. Some discussion took place as to whether as a rule in such cases abdominal hysterectomy was better than vaginal. The risks of fouling the peritoneum, and of ventral hernia occurring afterwards, were mentioned as contra-indications to the abdominal method. Dr. Duncan urged in favour of it that the tubes might have been diseased; that in vaginal hysterectomy the uterus might have been torn; and that any attempt to enucleate the tumour would have led to perforation of the uterus. The force of this latter objection seems to me to depend upon the method adopted. An

attempt to scoop the tumour entire out of its bed might have entailed this risk; but enucleation of a tumour bit by bit surely can be done without damaging the uterine wall. Two interesting cases of the enucleation of fibroids were related. Dr. Boxall in February reported a case in which fibroids caused severe uterine colic and elevation of temperature as early as a week after delivery. The cervix was dilated with water-bags, and three fibroids enucleated and removed. Dr. Galton in November exhibited a sessile subperitoneal fibroid enucleated by an abdominal operation of unusual difficulty, the success of which did credit to the resourcefulness of the operator. In January we had the report of a committee, composed of Mr. Targett, Dr. Griffith, and Dr. Routh, on a fibroid shown by the last named, which had become separated from the uterus and attached to the free end of the Fallopian tube. Dr. Duncan in March showed a fibroid polypus so large that its extraction entire with forceps had led to a laceration of the vagina, although the perinæum had escaped.

Only one specimen was shown of *disease of the vulva*. Dr. Duncan in April showed hypertrophied nymphæ and clitoris, probably of syphilitic origin, which he had treated by complete removal. The specimen was examined by a committee composed of Drs. Horrocks, Duncan, and Tate, and the histological appearances found were those of chronic inflammation.

We have had one contribution on the *functional disturbances* of the reproductive organs. That communication is one of permanent value. At our meeting in March Dr. Gow read a paper treating of the relation of heart disease to menstruation, and also to abortion and sterility. He showed that while in many cases valvular disease of the heart does not affect the functions of the reproductive organs in any way, yet that when an effect is produced, that effect is amenorrhœa or scanty menstruation, sterility absolute and relative, and a tendency to abortion. Dr. Gow's investigation was made

in the right method,—not starting from an effect, and then searching back into the antecedents; but beginning with the causal condition, and then tracing the effects. For this reason I think it unlikely that his conclusions will ever be overthrown. This paper fills a gap in our knowledge.

The only part of our proceedings that remains for me to mention is a most instructive demonstration by Mr. Targett of magic lantern slides showing hydatid disease of the pelvic bones; a rare disease, unlikely to come in the way of many of us, and therefore probably new to most who listened to the exhibitor, and interesting on that account as well as from the lucidity with which the subject was set forth by Mr. Targett.

Looking over the papers read and the specimens shown to the Society during the year, I think that all of them have been instructive; many of them have brought out more clearly important points in practice; and some have established new facts, not previously known. The year's work has been of a kind which amply justifies the Society's existence.

I now have to attempt to briefly do justice to the memory and work of those whom death has taken from us during the year.

One of the youngest of our Fellows, Mr. Harry Warnell Denton Cardew, died on January 25th. He served with distinction in the Turkish Red Cross Society during the Russo-Turkish war of 1877–8, and was honoured by being made a Chevalier of the 4th class of the Imperial Order of the Medjidie. In 1880 he entered as a student at the London Hospital, and in 1886 became a Member of the Royal College of Surgeons. At the time of his entry into the profession he had reason to believe that he would always be in affluent circumstances, and he took up the study of medicine rather because it attracted him than as a means of livelihood. But after becoming qualified his pecuniary position changed, and he found himself obliged to practise.

He took up the study of electricity. This force has always had, to the unscientific public, the fascination of power and of mystery. This, combined with the fact that its production requires complicated instruments with long names, which only an expert can understand and work, makes the electrical treatment of disease a peculiarly suitable tool for the quack. Cardew saw that so long as electricity was a mode of treatment only to be administered by costly instruments, manipulated by experts, requiring frequent visits, and of course high fees, so long it will be regarded by the profession with suspicion and incredulity. He perceived that if electricity is to take its place as a recognised agent in the treatment of disease, its methods must be so simplified that it can be used on a large scale by general practitioners and by patients themselves; and therefore he strove to make one visit to him suffice, at which he could give directions which would enable anyone else to carry out the treatment.

His first paper was "On the value of diminished electrical resistance of the human body as a symptom in Graves's disease."* I think this paper worth quoting as an example of the common sense which Cardew brought to bear on the subjects he took up. Charcot had pointed out that in Graves's disease the electrical conductivity of the body is increased, and had expressed the opinion that this might be of value in the diagnosis of atypical forms of that disease. Cardew showed that the solids of the body conduct electricity very badly indeed; that the electrical conductivity of the body is due to the fluids it contains; that the epidermis would act as an insulator were it not that it is perforated at many points by glands; and that it is by the fluid that these glands pour out that the body conducts electricity. From these data he showed that the increased conductivity in Graves's disease is simply because patients with that disease perspire much, and so the skin is moist; and he adds that the fact of abundant sweating can be found out without the help of the electrician.

* 'Lancet,' 1891, vol. i.

Mr. Cardew gave much attention to the electrical treatment of Graves's disease, which he so simplified that the patient could apply it herself; and physicians more competent than I am to appraise its value have spoken highly to me of its effect.

Electricity in gynæcology Mr. Cardew was accustomed to say he knew nothing about. Had he lived, he might perhaps have taken it up, and had he done so he would have improved it. The little work he did do, justifies me in saying that he worked in the right spirit, and that his premature death was a loss to medical science.

Mr. Cardew did one other thing: he founded the 'Clinical Journal' a weekly newspaper designed to supply the practitioner with practical information as to the latest improvements in the diagnosis and treatment of disease. He had just succeeded in making this journal a success when he was taken from us.

Dr. Domingo de Montbrun was descended from one of the generals of the first Napoleon. He was born on December 3rd, 1830, at Puerto Caballo, in Venezuela. In 1854 he graduated M.D. at the University of Caracas, and began practice at Barcelona, in Venezuela. Dr. de Montbrun so distinguished himself during an epidemic of cholera in 1856 that he was made mayor of Barcelona, and Surgeon-General to the army. For his services to the army he was given, in 1862, the title of "Brigade-General." Political troubles shortly after obliged him to leave Venezuela and take refuge in Trinidad. He had no qualification to practise in British territory, but he soon became so esteemed that an ordinance was passed by the Governor entitling him to practise. He was Vice-Consul, or Consul, for Venezuela, Colombia, Brazil, and Portugal, and received numerous decorations from the Governments of these countries for his services. In 1876 he became a Member of the Royal College of Surgeons of England. In 1881 he again visited England, as a delegate to the International Medical Congress, and took part in discussions on Battey's operation and on post-partum

hæmorrhage, his remarks being sensible, clear, and to the point. He was admitted a Fellow of this Society in 1892. His health began to fail in 1893, and he went for change first to Margarita, and then to Caracas, where he died on January 28th, 1894. The Venezuelan Government awarded him a public funeral, his body lying in the cathedral of Caracas until it could be removed to Trinidad. He was buried beside his children in a beautiful chapel, which he himself had built. The late Archbishop of Port-of-Spain said of him, "Dr. de Montbrun was one of those exceptional men who preferred to give than to receive."

Dr. William Leishman was born on June 8th, 1834, in the Manse at Govan, of which his father was minister. He was educated at the University of Glasgow, where he graduated M.D. in 1855. In the same year he became a Licentiate of the Royal College of Surgeons of Edinburgh, and in 1858 a Fellow of the Faculty of Physicians and Surgeons of Glasgow. He began to practise as a general practitioner in Glasgow, but gave especial attention to midwifery and gynæcology. For some years he was Lecturer on Medical Jurisprudence at Anderson's College, Glasgow. In 1868 he succeeded Dr. Pagan as Regius Professor of Midwifery in the University of Glasgow. He was Consulting Physician to the Maternity Hospital, Glasgow, and Physician for Diseases of Women to the Glasgow Western Infirmary. He was admitted a Fellow of this Society in 1860; served on the Council from 1866 to 1868, and as Vice-President in 1869–70; and delivered a weighty speech in the discussion on puerperal fever in 1875.

Dr. Leishman's first published paper appeared in the 'Glasgow Medical Journal' for 1860, and was on laceration of the perinæum during labour. He gave an elaborate history of the various modes of supporting the perinæum, from the times of the Arabian physicians downwards; then discussed the effect of supporting it, which he concluded was to increase the danger of rupture; and lastly, recommended the closure of such rents with wire sutures, a method which at that time was new.

Dr. Leishman wrote two books, which are his main contributions to obstetric science. These are an 'Essay, Historical and Critical, on the Mechanism of Parturition,' published in 1864; and a 'System of Midwifery,' published in 1873. These works might be instanced as illustrations of Buckle's generalisation as to the deductive character of the Scotch intellect. Leishman's method is the same as that of the many illustrious Scotchmen whom Buckle quoted. He viewed his subject historically, started from what he considered had been firmly established by the labours of his predecessors, and discussed details upon which opinions differed, first by reasoning from what had been already settled, and lastly by appeal to observation. His essay on the mechanis of parturition is an example of this mode of work. It contains the best account in our language of the evolution of our knowledge concerning the mechanism of labour. The profession in this country had learned this mechanism mainly through Rigby's translation of Naegele's monograph, and hence in England too exclusive credit was given to Naegele. Leishman, by translating part of their writings, did justice to Saxtorph and Solayrés de Renhac. His account of the mechanism of labour was an improvement on what had gone before, from the care he took to define his terms, and the fulness and fairness with which he stated the arguments for and against debatable opinions. He made careful observations to determine the presence or absence of the obliquity of Naegele, and came to the conclusion that as a rule it was not present. But he seems to have lacked confidence to follow out his observations when they contradicted opinions which he thought correct. Thus after stating that the centre of the os uteri may be assumed to correspond pretty nearly with the axis of the brim, and that therefore the fact that the sagittal suture bisects it may be taken as evidence that the head enters without Naegele obliquity, he goes on to say that he even doubts whether, when the sagittal suture does not bisect the circle formed by the os, the posterior half is the smaller. In other words, he had

noticed that posterior obliquity, the reverse of the Naegele obliquity, was sometimes present in normal labour. It has recently been asserted by Pinard and Varnier, and supported by the evidence of frozen sections, that in the beginning of normal labour posterior obliquity is the rule. I think that if we look only to pelves of full size, with children of, or under, the average size, the French observers are right, and that if Leishman had had more confidence in his observations he might have anticipated Pinard and Varnier. He fully accepted the theory that the ischial spines determine the rotation of the occiput forwards in the first and second positions; but he thought that their influence in the third and fourth positions had been exaggerated. He gives observations of his own which show that the head, when it begins to appear at the vulva, is still in the oblique diameter of the pelvis, and only turns forward when the perinæal tumour is formed; in other words, that after the greatest diameter of the head has passed the ischial spines and planes, its rotation is still incomplete: but he does not seem to have been led by these observations to question the dependence of the rotation upon the ischial planes.

The popularity of Leishman's 'System of Midwifery' is attested by the fact that four editions of it have been exhausted, and that its author was engaged upon a fifth at the time of his death. It is almost superfluous in this Society to speak of its merits. This work seems to me second to none in the care which the author takes to do justice to those who have preceded him; in the judgment he displays in weighing conflicting opinions, and in caution in refraining from rash conclusions. Its defects arise out of its merits, and are characteristic of Leishman's mode of work. He quotes the opinions of the elders as if they had in themselves some authority, without inquiring what foundation they had for their statements. He seems to attach nearly as much weight to opinions as to observations. He very seldom lets his own individual experience speak without reference to other people's. The statistical

methods employed so ably by Simpson and by Duncan he never used.

Dr. Leishman was a man of wide culture, and was especially valued by his colleagues and professional brethren for the soundness of his judgment. He was dignified in physique, courteous in manner, and most considerate of his patients' feelings. Dr. Gairdner says of him that he combined strength and suavity; that his words were usually, if not always, on the side of peace and harmony, and studiously free from personal considerations. He was above, and incapable of, the exaggerations that spring from a heated and ill-considered partisanship. His judgment was safe, and in the main conciliatory, without being weak or colourless. He died from brain disease on February 18th.

Mr. Daniel Wheeler was educated at Guy's and St. Thomas's Hospitals. He was admitted a Member of the Royal College of Surgeons in 1841, and a Licentiate of the Society of Apothecaries in 1842. He joined this Society in 1860. He practised in Chelmsford, and was one of the surgeons to the Chelmsford and Essex Dispensary and Infirmary. He was Surgeon to the Chelmsford workhouse, and to a district of the union; Admiralty Surgeon and agent, and a Certifying Surgeon under the Factories Act. He died on February 26th, aged seventy-five. Mr. Frederick Carter, of Billericay, who knew Mr. Wheeler well, writes to me concerning him, "He was a most kindly, upright man, universally respected in and out of the profession, and his funeral was attended by a large number of medical men, and I believe almost thousands of his old patients and fellow-townsmen. He was a practitioner of quite the old school; stuck to his work, his only relaxation being an occasional day's fishing, in which he took great pleasure. I don't think he had an enemy, and certainly I know no one who was among his professional brothers more respected and personally popular."

Dr. William J. H. Lush was born at Damerham, Wilts,

and educated first at King's College School, then at King's College Hospital, where he obtained the Warneford Scholarship as well as other distinctions. He was admitted a Member of the Royal College of Surgeons in 1872, and then became Resident Medical Officer to the St. George's Dispensary, Hanover Square. He was admitted a Fellow of this Society in 1893, and in the same year became a Licentiate, and Licentiate in Midwifery of the Royal College of Physicians of Edinburgh. He commenced private practice at Fyfield, near Andover, Hants. In 1875 he became a Member, and in 1877 a Fellow, of the Edinburgh College of Physicians. In 1879 he took the M.D. of Brussels, obtaining honours in clinical medicine. He wrote a little book to assist students, consisting of answers to examination papers; and he contributed to the medical journals papers on Nocturnal Epilepsy and its connection with Insomnia; on Sudden Death after Labour; and on the Therapeutic Uses of Oxygen,—all of them papers which show that he thoughtfully studied his cases. In the autumn of last year his health obliged him to give up country practice and go to Eastbourne, where he practised till within a few days of his death. He was a man of bright and genial manner; and his unselfish devotion to duty is illustrated by the following incident:—He broke his arm; immediately afterwards he was summoned to a woman in labour; he went at once, attended to her, and then had what was necessary done to his own arm. He died on April 28th, aged forty-three.

Dr. Archibald Weir, of Great Malvern, was educated at the University of Glasgow. He became a Licentiate of the Royal College of Surgeons of Edinburgh in 1851; was admitted a Fellow of that College in 1858; and took the M.D. degree at St. Andrews in 1862. He made several expeditions to Greenland in whaling ships. He served through the Crimean war on Lord Raglan's staff, and was in charge of the English hospital at Scutari. After the war he received British and Turkish medals. Reasons of health induced him to

settle at Malvern. He was asked to serve in India during the Mutiny, but having suffered from cholera and dysentery was obliged to decline. He was admitted a Fellow of this Society in 1876. He had a large general and consulting practice in Malvern. He was a man who spoke little about himself, but was absorbed in his profession, taking no prominent part in municipal or public matters. He died on May 17th, aged sixty-five.

Mr. John Clay was born at Sutton, in Nottinghamshire, in 1821. He was apprenticed to Dr. Pettinger, of Nottingham, and afterwards entered as a student at the Birmingham Medical School, where he carried off many prizes. In 1845 he became a Licentiate of the Society of Apothecaries, and in 1858 a Member of the Royal College of Surgeons. He began practice in Digbeth, a thickly populated part of Birmingham. Here, then, in Moseley Street, and for the last twenty-five years of his life in Steelhouse Lane, in the centre of Birmingham, he carried on a large general practice until the time of his fatal illness.

In 1859, at the foundation of this Society, he became one of its original Fellows. He served on the Council in 1868–9, and as Vice-President from 1872 to 1874. From the beginning of his career he took an interest in the subjects with which this Society is concerned, and his ardour and perseverance led to distinctions rarely achieved by one whose work has to be done in the midst of the incessant calls of general practice. In 1860 he published a translation of the chapters on diseases of the ovaries from Kiwisch's Clinical Lectures, with notes, and an appendix, in which he collected and tabulated 395 cases of ovariotomy—an operation at that time so far from being well established that such a collection was useful. In 1866 he was awarded the Jacksonian prize for an essay on "Ovariotomy: pathology and diagnosis of cases suitable for this operation, with the best method of performing it, and the results of recorded cases." This essay was never published, but it can be seen in MS. at

the Royal College of Surgeons. It is a very careful *résumé* of what was at that time known about ovarian tumours and their treatment, written without egotism or partisanship, and with an appendix of cases classified in various ways, so as to bring out general facts about the disease and the operation. In 1868 he gained the Fothergillian prize for an essay upon "The diagnosis and treatment of non-malignant tumours of the uterus," but this essay also seems to have remained unpublished. In 1872 his knowledge and ability were recognised by his appointment as Obstetric Surgeon to the Queen's Hospital, a post he held for nineteen years. About the same time he became Professor of Midwifery in Queen's College, Birmingham, a post which he retained after the amalgamation of that institution with the Mason College. In 1880 he published a paper on "The treatment of cancer of the uterus and female generative organs by a new method." The treatment of cancer was a subject in which he took more interest than in any other. He thought (I do not know why) that the remedy for cancer must be internal, and that it would be found among the carbohydrates. Of the bodies having this composition Chian turpentine seemed the one that could be taken in the largest doses and for the longest periods, and so Clay chose this for trial. In the paper in which he published the results he did not say that a permanent cure for cancer had been obtained, but only that "an amount of relief has been secured which has not been afforded by any other plan of treatment." That other observers did not find the same benefit Clay thought was because they did not get the drug in a pure state. This treatment has now gone the way of other cancer cures; but Dr. Malins, who knew Clay well, and to whom I am indebted for information about him, says, "Whatever be the verdict of posterity upon this method, there is no doubt that he believed in it with all sincerity, and was fully convinced in his own mind of the value of this treatment in producing a decided influence upon cancerous growths." The latest

public duty that he undertook was the delivery of the Ingleby Lectures on "The mortality of women in childbirth." These lectures were published in the 'Birmingham Medical Review' for 1878 and 1879. They contain a survey, from a clinical point of view, of the ways in which childbirth may lead to death; and show their author to have been a well-informed, thoughtful, and judicious practitioner.

Mr. Clay was a man of retiring disposition, reticent, quiet in bearing, and slow to make friends; but, though externally reserved, a man of genuine sympathy and kindness. He took little part in public work beyond his profession, although at one time a member of the Board of Guardians. He seldom appeared at medical meetings, but when he did he expressed himself in a plain, outspoken manner, free from adornment or display. As a teacher he was clear, sound, and practical. When the recent rapid advance of surgical gynæcology began, Mr. Clay's opinions were already formed, and the glamour of operative work had no fascination for him.

His health had been failing, from cardiac disease, for two years; but he kept at work till about a fortnight before his death. Up to a few days before he died he dictated directions about his patients. He died on June 27th, in his seventy-third year.

He was an uncommon man, of exceptional ability and merit, who worked from the love of work, and attained a high position in the esteem of those who knew him; but who, owing to his time and energy being absorbed by general practice, never took the position in the eyes of the profession and the public to which his worth and work entitled him.

Mr. Corrie Jackson was born on August 10th, 1849. He was the son of a captain in the East India Company's service. He was educated at Kelvedon, Essex, and at Charing Cross Hospital. He became a Member of the Royal College of Surgeons of England, a Licentiate of the Royal College of Physicians of Edinburgh, and a Licen-

tiate in Midwifery of that body in 1872, and began practice in Little Pulteney Street. In 1876 he removed to Poland Street, and in 1889 to Great Marlborough Street. He became a Fellow of the Royal College of Surgeons of Edinburgh in 1884. In 1887 he became a Fellow of this Society. He had a large general practice. He was District Medical Officer, Surgeon to the police, and to several clubs, and to the Truss Society. He was Public Vaccinator, and was a strong advocate of the use of calf lymph. He published a case of occlusion of the gall-bladder. He was a man of fine physique and great force of character, a prominent and active Freemason. Seven years before his death he met with a carriage accident, and was kicked on the head by a horse. On April 9th, 1894, he was seized with hemiplegia. On April 27th he went into the National Hospital for the Paralysed and Epileptic, under the care of Dr. Gowers; and he died there on July 1st.

Dr. William Lauder was the son of the Rev. William Lauder, of Port Glasgow, and was educated at the University of Edinburgh. He became a Licentiate of the Royal College of Surgeons of Edinburgh in 1877, graduated M.B. in 1878, and M.D. in 1886. After becoming qualified to practise, he held office as House Surgeon to the Chorlton-upon-Medlock Dispensary, Manchester, then as House Surgeon to St. Mary's Hospital, and then as House Surgeon to the Southern Hospital for Women and Children in the same city. He was elected a Fellow of this Society in 1886. He was a Local Secretary to the North of England Obstetrical and Gynæcological Society, and was a frequent contributor to the 'Medical Chronicle.' He died on September 17th, at the early age of thirty-eight, from enteric fever, contracted during a holiday in Scotland. A biographer of him says that the great trait in his character was his conscientiousness, which procured him high esteem. He was a reserved, serious-minded man, but with a fund of quiet humour. A large attendance of medical men and others at his funeral attested his deserved popularity.

On October 11th the Society sustained in the death of our esteemed Librarian, Mr. Richard Wade Savage, at the age of forty-nine, a loss which can be fully appreciated only by those who have been concerned in its management. Mr. Savage was the son of a medical man, Mr. J. W. Savage, of West Bromwich. He was one of the first pupils at Epsom College, and afterwards began to study for the medical profession, but was prevented from completing the curriculum by a long illness, resulting in the loss of a limb. He was appointed Librarian to this Society upon the death of Mr. Watson, in 1881. From his appointment to his death he made the interests of this Society his chief care. In his last illness, the ways in which the work of the Society might suffer from his absence were ever in his thoughts; and by instructions from his sick-bed he strove to prevent mistakes or oversights from occurring. He was a man of culture and refinement; a most diligent and faithful officer; punctual, methodical, and courteous. The Society could not have been better served than it was by him. The illness from which he died at first seemed a trivial one, but an attack of syncope unexpectedly cut short his life.

Dr. William Goodell was the son of the Rev. William Goodell, of Holden, Massachusetts, and was born in 1829 at Malta, while his parents were on their way to Turkey, where his father was a missionary. Goodell entered Williams College, Massachusetts, in 1849, and then the Jefferson Medical College, Philadelphia. He received his diploma in 1854, and then rejoined his father and began practice at Constantinople. In 1857 he married, at Smyrna. In 1861 he returned to America, and began practice at West Chester. In 1865 he moved to Philadelphia, and was appointed Physician to a lying-in hospital in that city, called the Preston Retreat. Soon afterwards he restricted his practice to Obstetrics and Gynæcology. In 1870 he was appointed Lecturer on Obstetrics and the Diseases of Women at the University of Pennsylvania, and in 1874 Clinical Professor of the Diseases of Women and Children.

He was a member of numerous medical societies in America, and in 1877 was elected a corresponding Fellow of this Society. He died on October 27th, 1894.

Goodell's name will always receive honourable mention in the history of obstetric science by reason of his writings on delivery in contracted pelvis. Simpson had urged resort to turning as a substitute for forceps and craniotomy, and had described the different effects upon the fœtal head of delivery with forceps and delivery base first; but he gave no directions for the choice of treatment according to the *kind* of pelvic contraction. Schroeder had recommended version in *all* forms of contracted pelvis, although he recognised that version did not offer the same advantages in generally contracted as in flat pelves. Goodell's advice was more precise. He restricted version as a substitute for forceps to pelves narrowed in the conjugate diameter to from two and three quarters to three and a quarter inches, and in cases of less contraction when the forceps had failed after half an hour's faithful trial. But in cases of uniformly contracted pelvis he urged that the forceps was the better mode of delivery. He also described the mechanism by which the after-coming head passes through the brim of a flattened pelvis; how it was at first tilted so that the posterior-lying parietal bone was the lower, and impinged on the sacral promontory; and then, with this as a centre, the head revolved, so that the anterior-lying parietal bone moved past the symphysis pubis. Matthews Duncan afterwards experimentally tested the mode in which an after-coming head passes through a contracted pelvis; and he remarks ('Trans.,' vol. xx) that Goodell, "alone among authors," had observed "with singular accuracy" the movements of the head which Duncan's experiments showed might have been expected.

Goodell also published a memoir on "Concealed Accidental Hæmorrhage," in which he collected and analysed 106 cases of this rare condition, and produced the most elaborate and complete monograph on the subject that has

yet appeared. He also strongly urged that a lying-in woman should not be always recumbent, but should daily sit up for a little while to favour the escape of discharges.

Goodell wrote many papers on gynæcological subjects, which will be found in American periodical literature. The substance of them is contained in his 'Lessons in Gynecology,' and in his article on "The Treatment of Ovarian and Extra-ovarian Tumours," published in the 'American System of Gynecology and Obstetrics.' 'Lessons in Gynecology' was published in 1879, and a second edition appeared in 1880. It consists of thirty-three clinical and didactic lectures. It is what is called "up to date,"—that is, embodying the latest novelties in practice of the time at which it was written. More of its space was allotted to minor than to major gynæcology. It is interesting to note, as exemplifying how rapid change in this department of medicine has been, that while anteflexion and laceration of the cervix are described at length, and an amount of benefit said to be effected by the treatment of the latter condition that the reader of the present day finds it hard to understand, yet the index does not contain the words "Fallopian" or "Tube," nor anything ending in "salpinx;" and there are no lessons about perimetritis or parametritis. Spaying is recommended for fibroids, and the author announces his intention of doing it for epilepsy.

Dr. Goodell was a man of tall stature and dignified bearing, and a ready speaker. He was distinguished among his professional brethren for his great gift of terse and lucid literary expression. Whatever opinion may be held as to the permanent value of his writings, all will admit them to be clear, impressive, and practical. I learn from a memoir of Goodell in the 'American Journal of Obstetrics' that Goodell took great pains with the literary form of his writing; that his style, easy and forcible as it seems, was the fruit of great labour. His talent of setting forth what he thought in a striking way, in his later years led him to speak, as it were, *ex cathedrâ*, and to express opinions without fully enough considering the sub-

ject; and hence his utterances, spoken and written, are unequal in value. The best example of his rare literary faculty is an address delivered to the Philadelphia County Medical Society on the "Life and Writings of Louyse Bourgeois." Goodell had mastered the somewhat rambling work of the old French midwife from the title-page to the end, and grasped its meaning and spirit with sympathetic insight, even to the extent of discovering an anagram contained in some dedicatory verses; and from the book he drew a broad and vivid picture of French life, and of a royal lying-in chamber, in the sixteenth century. This address seems to me one of the best pieces of literature ever produced by any physician. It may be apropos to the present juncture of the Society's affairs to remark that while in England, in the nineteenth century, midwives are not registered, and certain doctors seem afraid that midwives will rob them of some of their practice; in France, in the sixteenth century, midwives were enrolled in a guild into which Madame Bourgeois found difficulty in getting admission, because the midwives upon whose verdict it depended said, "Since her husband is a surgeon, she will have underhanded dealings with these doctors, and become a cut-purse in the market."

Before quitting the chair, which for the last two years it has been my privilege to fill, I wish to thank the Officers and Council for their help and support, and the Society for its forbearance with my shortcomings; and to congratulate the Society on its choice as my successor of one whose scientific work and professional position will reflect credit upon it, and who has earned the suffrage of the Society by unwearied work for it and devotion to its best interests.

It was moved by Dr. Gervis, seconded by Dr. Hayes, and carried unanimously—"That the best thanks of the meeting be given to the President, Dr. Herman, for his most interesting address, and that he be requested to allow it to be printed in the next volume of the 'Transac-

tions;' and further most cordial thanks for the very efficient manner in which he has presided over the meetings of the Society during his term of office."

The Scrutineers having presented their report, the result of the ballot was declared by the President as follows:

OFFICERS AND COUNCIL.

President.—Francis Henry Champneys, M.A., M.D.

Vice-Presidents.—James Duncan, M.B.; John H. Galton, M.D.; Peter Horrocks, M.D.; Thomas Cargill Nesham, M.D. (Newcastle-on-Tyne).

Treasurer.—John Baptiste Potter, M.D.

Chairman of the Board for the Examination of Midwives.—C. J. Cullingworth, M.D.

Honorary Secretaries.—William Duncan, M.D.; W. Radford Dakin, M.D.

Honorary Librarian.—John Phillips, M.A., M.D.

Other members of Council.—Thomas Rutherford Adams, M.D. (Croydon); Fletcher Beach, M.D. (Kingston Hill); Robert Boxall, M.D.; Archibald Donald, M.A., M.D. (Manchester); Lovell Drage, M.D. (Hatfield); Willoughby Furner (Brighton); William John Gow, M.D.; Walter S. A. Griffith, M.D.; Gerald S. Harper, M.B.; Constantine Holman, M.D.; John D. Malcolm, M.B., C.M.; David Ritchie Pearson, M.D.; William Rivers Pollock, M.B., B.C.; Leonard Remfry, M.A., M.D.; John Henry Salter (Kelvedon); John Bland Sutton; James Henry Targett, M.B., B.S.; Walter W. H. Tate, M.B.

Dr. PLAYFAIR moved, and Mr. MEREDITH seconded—"That this meeting expresses its best thanks to the retiring Vice-Presidents, Mr. Alban Doran, Dr. Edwin Hollings, and Mr. Webb, and to the other retiring members of Council, Drs. Andrew Brown, Clapham, Tait, Sir John Williams, and Mr. Sidney Turner."

MARCH 6TH, 1895.

F. H. CHAMPNEYS, M.A., M.D., President, in the Chair.

Present—38 Fellows and 4 visitors.

Books were presented by the Hunterian Society, the Westminster Hospital Staff, the Middlesex Hospital Staff, the American Gynecological Society, and Dr. Henry Sutherland.

William Harvey Maidlow, M.B.Durh., F.R.C.S.Eng.; and Henry Percival George Elkington, M.R.C.S., L.S.A. (Surg.-Capt.), were admitted Fellows of the Society.

Samuel Buckley, M.D.Lond., F.R.C.S. (Manchester); John G. Ogle, M.D.Oxon (Reigate); and Arthur King, M.B., C.M., D.P.H. (Watford), were declared admitted.

The following gentlemen were elected Fellows of the Society:—Edward Gilbert Emerson Arnold, L.R.C.P.Lond.; John Davoren, L.R.C.P.I., C.M.; Charles Edward Sparks, M.B., B.C.Cantab.

The following gentlemen were proposed for election:—John Adolph Albrecht, L.R.C.P. and S.Edin. (Manchester); Francis Seward Beachcroft, L.R.C.P.Lond. (New Swindon); George Stanley Dodgson, B.A., M.B., B.C.Cantab.; Henry Bannerman Morison, M.B.Durh.; George James Rutherford, L.R.C.P.Lond. (Hastings); Sidney Joseph Stuck, L.R.C.P.Lond.

TUBAL MOLE REMOVED BY ABDOMINAL SECTION.

Shown by A. H. N. Lewers, M.D.

Dr. Lewers showed this specimen. The notes of the case are as follows :

S. M—, aged 28, was admitted under Dr. Lewers's care into the London Hospital on March 24th, 1894. She had been married two years and a half, but had had no children or miscarriages.

History of the present illness.—She says her illness dated from the beginning of March with pain in the left iliac region, which has steadily increased in severity up to the time of her admission. She thought there was a lump in the side where she felt the pain.

Menstrual history.—She menstruated first at the age of thirteen, and has always been regular every month up till a week before Christmas, 1893, when the last proper period occurred.

On March 10th, 1894, she passed something "like a piece of flesh," and about an hour afterwards lost a good deal of blood. More or less metrorrhagia continued till she was admitted into the hospital.

On examination then the breasts presented an active appearance, and contained milk. The uterus was distinctly and uniformly enlarged, and was soft. The cervix was blue and soft. There was a swelling the size of a Tangerine orange felt in the left side of the pelvis. The temperature and pulse were normal.

Taking all the points of the case into consideration, it seemed very probable that the case was one of tubal pregnancy, and Dr. Lewers advised abdominal section, to which the patient assented.

Operation (March 27th, 1894).—The patient walked to the operation table. After she was anæsthetised she was

placed in Trendlenburg's position. On opening the abdomen there was no blood diffused in the general peritoneal cavity, but when the intestines were held out of the way, a mass, estimated at a teacupful, of recent "currant-jelly" clot could be seen in the left posterior quarter of the pelvis. The uterus was considerably enlarged, and was very soft; it presented the bluish-red colour seen either in the ordinary pregnant uterus, or in the uterus when sympathetically enlarged in cases of extra-uterine pregnancy. To the left of it was the swelling referred to above, which proved to be the left Fallopian tube. This was held up and the broad ligament below it transfixed, and tied with the Staffordshire knot; another ligature was then thrown round the whole pedicle, and the tumour removed. The peritoneum was washed out with several jugs of weak iodine water, and a Keith's tube having been inserted into Douglas's pouch, the rest of the wound was closed in the usual way.

As regards the specimen, the tube had not ruptured, and the fimbriated end of it was open. The clot seen in the pelvis had evidently come from the tube through the open fimbriated extremity.

The patient made an uninterrupted recovery, and was discharged on April 17th.

Dr. Cullingworth inquired if there was any evidence, microscopic or otherwise, of the presence of an embryo or of embryonic membranes in Dr. Lewers's specimen. He asked this question without in any way desiring to dispute the correctness of Dr. Lewers's opinion as to the nature of the case.

A COUCH TABLE.

Shown by Robert Wise, M.D.

VAGINAL AND UTERINE POLYPTOME.

Shown by H. Macnaughton-Jones, M.D.

Dr. Macnaughton-Jones showed an improved form of his vaginal and uterine polyptome. The appliance consists of two light blades, grooved on the inside, and looking somewhat like those of a midwifery forceps, with the handles at a right angle to the blades. By means of a long dagger-shaped knife working on a swivel, and protected by the grooves in the blades, the fibroid can be divided into four pieces. A fine saw, or another flat cutting blade (these were shown) can be substituted for the piercing blade.

VAGINAL AND UTERINE STEM.

Shown by H. Macnaughton-Jones, M.D.

Dr. Macnaughton-Jones showed also a new intra-uterine stem, for use after operations for stenosis of the cervix. It is made of celluloid and wire, and can be bent to any required angle by immersion in hot water. The end is shaped like that of the uterine sound, and the stem has all the advantages of a glass stem in point of cleanliness, while the button end is so constructed that it can be withdrawn by the patient herself if necessary, by means of a string attached. He only resorted to the use of the uterine stem after the operation referred to.

VAGINAL AND UTERINE INSUFFLATOR.

Shown by H. Macnaughton-Jones, M.D.

He showed also his adaptation of a laryngeal insufflator, for use in insufflating the os uteri or cervix. It was convenient for employment through the speculum, and for general purposes where an antiseptic powder was required in operations. The powder shown with it was "Loretin," a new antiseptic, a combination of iodine, sulphonic acid, and quinoline, prepared by Professor Claus, and recommended by Professor Schinzinger of Freiburg. It had no smell, and its germicidal properties had been proved to be greater than those of iodoform; it was astringent as well as antiseptic.

The polyptome is made by Messrs. Mayer and Meltzer; the insufflator by Messrs. Burroughs and Wellcome, from whom he obtained the "Loretin;" and the stem by Messrs. Arnold.

Dr. Herman said he did not see the necessity either for lacerating the perinæum in extracting large polypi, or for Dr. Macnaughton-Jones's ingenious instrument. A large polypus was always in the vagina, and therefore accessible; and the largest polypus could be easily and safely extracted by cutting it into small pieces with scissors, and removing a piece at a time. He had in this way removed a polypus weighing $2\frac{1}{2}$ lbs.

The President asked by what means Dr. Macnaughton-Jones avoided the occurrence of disasters in the use of stems. He thought he could put his finger upon writings in the 'Transactions' of the Society referring to several autopsies following the use of stems.

Dr. Horrocks asked if there was any scientific evidence of the germicidal properties of the new powder shown.

In reply to Dr. Herman, Dr. Macnaughton-Jones said there were intra-uterine and vaginal polypi that no scissors would, unless by long and risky delay, divide. The polyptome obviated the need of dividing the perinæum as had to be done in some

cases. The instrument was applicable to intra-uterine fibroids for the *morcellement* of the mass. In answer to the President's question he quite agreed as to the danger of intra-uterine stems, and he limited his use of them to cases of stenosis where the internal cervix had been divided for dysmenorrhœa and sterility. Such a stem as that he showed could not, with any degree of care, do mischief. The "Loretin" powder he referred to had been tested for its germicidal properties, and was proved to be more powerful than iodine. The sulphur element added to its efficacy, and the absence of odour was a great advantage.

INAUGURAL ADDRESS.

Gentlemen,—My first and most pleasant duty is to return you my best thanks for the honour you have done me in electing me to fill the office of President of the Obstetrical Society of London, an office the most exalted which can fall to the lot of an Obstetric Physician.

The dignity thus conferred is one which, I feel, carries with it little prospect of ease; indeed, to discharge its duties adequately a man must possess very exceptional qualities.

It shall be my endeavour to supply by good-will any defects "quas aut incuria fudit, Aut humana parum cavit natura."

I said just now that the office of President carries with it little prospect of ease. This is always true, but at the present time it is more than true; for the Society's year opens with a disagreeable situation,—so disagreeable, indeed, that I think our late President is much to be envied. The facts are known, at least in their outline, to most of you.

The General Medical Council has threatened us with anathema for infringing the Medical Act and deceiving the public; it has even hinted at the word "infamous" being applied to us (in a strictly professional sense, of course), and all the consequences which follow the application (in a strictly professional sense) of that adjective.

We have been guilty of examining midwives, of giving them certificates (or diplomas), of saying that we had done so, and of expressing our opinion that those who passed were "skilled midwives, competent to attend natural labour."

This we have done for twenty-three years without let or hindrance; and as some men have suddenly waked up and found themselves famous, we have suddenly waked up and found ourselves (nearly, but not quite, and in a strictly professional sense) "infamous."

Now this requires a little explanation.

Those of you who read the medical journals have noticed that for some little time agitators have been going about the country endeavouring to stir up an opposition to midwives, and particularly (please observe) to "skilled" midwives,—that is, women who have received some sort of regular training, and have been taught how not to infect their patients, and when to call in the doctor.

Their interest in the Obstetrical Society is touching, but it is to be observed that their real object is not to "mend" but to "end" our examinations. Among the phrases which have served these agitators may be noticed one that we are "creating a new order of medical practitioners."

This is as correct as the classical definition of the crab which was criticised by Cuvier; it is perfectly accurate, except that (1) we have not "created" any persons at all; (2) midwives are not "medical practitioners" (in the technical sense); and (3) if either doctors or midwives are "new," I fear that history tells us with no uncertain voice that midwives antedated doctors by an enormous length of time. It is hardly too much to say that midwives must have begun nine months after there were two women and one man on the earth.

History of Midwives in England.

The history of midwives in England may be read in Dr. Aveling's interesting book on the subject ('English Midwives,' 1872). Margaret Cobbe attended Elizabeth Woodville, Queen of Edward IV, on November 1, 1470, when Edward V was born (p. 15). Our present Queen

was the first queen ever attended in her confinement by a man.

In 1616 Dr. Peter Chamberlen begged James I "that some order may be settled by the State for the instruction and civil government of midwives." This was the father of the younger Peter Chamberlen, Physician in Ordinary to three kings and queens of England, who moved the Crown to organise midwives into a company. This was opposed by the College of Physicians (p. 24). Dr. Chamberlen, in his work 'A Voice in Rhamah,' speaks thus:—"Shall want of president (precedent) be here objected, yet this hath president in some foreign examples. The objection infers thus much: Because there was never any order for instructing and governing midwives, therefore there never must be; because multitudes have perished, therefore they still must perish; because our forefathers have provided no remedie, nor knew any, therefore we must provide none, though we know it. It may be, when bishops are restored again, their ordinaries will come in to plead their care. Of what? Truly, that none shall do good without their leave" (p. 27). These words are unfortunately as true to-day as when they were written.

Among other instructors of midwives may be mentioned the great Harvey (p. 46). During the eighteenth century many proposals were made for the instruction and government of midwives. "There were two points upon which all agreed, namely, that efficient instruction ought to be given to midwives, and, when instructed, that they should be examined and receive legal licence to practise. . . . . When the Church undertook the control of medical affairs, it gave licences alike to physicians, surgeons, apothecaries, and midwives; but when the Faculty took these matters into their own hands, midwives were ignored. The licence of the Bishop was to English mothers an excellent safeguard against ignorant and dissipated pretenders. When it ceased to be granted, and neither Church nor State demanded any qualification, women, devoid of skill and

character, were permitted to practise unchallenged, and the public had no ready method left of distinguishing between those who were bold and untaught and those who were modest and instructed" (pp. 151–2).

Proposals for the Regulation of Midwives.

In 1813 the Society of Apothecaries endeavoured to persuade Parliament to pass enactments for the examination and control of midwives, making it penal for any woman to practise without a licence, gained after examination, and given by the committee of the district in which she lived. There were to be twenty-four districts, including London, each with a properly constituted Board (pp. 153–4).

In 1869 Dr. Farr, of the Registrar-General's Department, suggested to the Obstetrical Society the investigation of the causes of infant mortality, which was very great, especially among the newly born ('Obstet. Trans.,' vol. xi, for 1869, p. 24). A committee was appointed and a paper of questions sent to every Fellow: "(1) What proportion of births is attended by medical men and by midwives? (2) Are the midwives instructed?"

1. It was stated, in reply, that among the poor population of villages, 30 to 90 per cent. were attended by midwives. The same proportion obtained in the large provincial towns, and especially in large manufacturing towns, while in the small manufacturing towns the proportion was less.

2. In answer to the second question, replies in the negative were received from all parts of the country ('Obstet. Trans.,' vol. xi, for 1869, pp. 132 and 997).

In 1872 the General Medical Council passed two resolutions.

1. In March, Dr. (now Sir Henry) Acland proposed, and Dr. Stokes seconded, the following resolution, which was carried:—"That a committee be appointed to consider

and report whether the General Medical Council has power to make rules for the special education of women, such as may entitle them to obtain a qualification to be certified by the Council; and that the committee do further report for what purpose such qualifications (if any) should be granted."

2. "What are the most desirable means for educating, examining, and certifying in respect of them, with especial reference to midwifery, the management of medical institutions, dispensing, and nursing."

In proposing the motion Dr. Acland stated that "the Medical Act gave the Council the power of providing for the medical necessities of the people."

In seconding the motion Dr. Stokes said "midwives were practitioners, to a certain extent, of a branch of surgery and medicine. The interests of that large number of the poor who came under the care of these female practitioners ought to be cared for. The Council should not be an examining body, but it should register the qualifications derived from other licensing bodies" (Aveling, pp. 175–6).

Bills for the Regulation of Midwives.

The following is a brief summary of the *various bills* which have been framed for the examination and registration of midwives:

(1) In 1813 the Society of Apothecaries, as has been already stated, tried to get Parliament to legislate on this subject, but without success.

(2) The bill of 1878 was part of the Medical Act originally, and was promoted by the General Medical Council. The portion of it referring to midwives was dropped, as it was feared that it might cause confusion between midwives and medical men if both were included in the same bill. It was introduced into the House of Lords by the Duke of Richmond.

(3) A bill was framed in 1882 by the British Medical Association, but was never presented to Parliament.

(4) A bill was prepared in 1890 by the Midwives' Institute, amended by the Obstetrical Society, the British Medical Association, and a Select Committee of the House of Commons, but was talked out on the second reading by Mr. Bradlaugh, because he disapproved of midwives being required to produce a certificate of moral character before registration while medical men were not required to do so.

The bill was dropped on the understanding that a Select Committee should be formed to consider the whole subject.

On November 29th, 1889, the General Medical Council resolved—"That this Council regards the absence of public provision for the education and supervision of midwives as productive of a large amount of grave suffering and fatal disease among the poorer classes, and urges upon the Government the importance of passing into law some measure for the education and registration of midwives."

In April, 1891, the Royal College of Physicians appointed a committee to report on the Midwives Bill, and this report expresses the conviction that legislative action is desirable in order to secure the due education, examination, and registration of midwives; and it further recommends that a Parliamentary Select Committee should be asked for, before whom the question might be fully investigated with a view to legislation (Midwives' Institute pamphlet, p. 6; 'Brit. Med. Journ.,' vol. i, 1891, p. 986).

Select Committees.

On June 17th, 1892, a Select Committee of the House of Commons, appointed to investigate the question of the registration of midwives, reported as follows:

Report of the Select Committee of the House of Commons on Midwives' Registration, June 17th, 1892.

"Your committee have sat six times, and have taken most valuable and important evidence from medical men and practitioners in various spheres of practice both in favour of and opposed to the registration of midwives, and also from trained and experienced midwives. This evidence has shown that there is at present serious and unnecessary loss of life and health, and permanent injury to both mother and child, in the treatment of childbirth, and that some legislative provision for improvement and regulation is desirable.

"They have also had evidence showing that there is a wide field for training in midwifery now unused, connected with parish infirmaries and home practice in populous places.

"Their inquiries had been cut short by the approaching early dissolution of Parliament, and they therefore report the evidence, and recommend a continuation of the inquiry in the next session of Parliament."

Another similar committee, on August 8th, 1893, reported thus:

Report of the Select Committee of the House of Commons on Midwives' Registration, August 8th, 1893.

"Your committee have sat four times, and have taken most valuable and important evidence, which, with that given last year at six sittings, includes that of distinguished medical men and women in various spheres of practice, both in town and country, and also from trained and experienced midwives from various districts.

"Your committee are of opinion that a large number of maternal and particularly infant deaths, as well as a serious amount of suffering and permanent injury to women and children, is caused from the inefficiency and want of skill of many of the women practising as midwives, without proper training and qualification. They

find that amongst the poor and working classes, both in the country and in towns, the services of properly trained midwives have been eminently successful and of great advantage to the community. As proved by the evidence before your committee, the services of midwives are a necessity, and, consequently, every precaution should be taken to discourage the practice of women who are ignorant and unqualified.

"Your committee are of opinion that by legislative enactment no woman should be allowed to call herself or to practise as a midwife except under suitable regulations, but that the term 'Registered Midwife' should be protected and restricted to those who have been properly trained, and who alone should be placed on the 'Midwives' Register;' and that the vested interests of untrained midwives should be efficiently protected by inserting, in any future bill, a clause to the effect that any woman who produces evidence that she is in practice as a *bonâ fide* midwife at the time of the passing of the Act shall, without formal registration, be allowed to continue her calling under the term 'midwife' alone, but shall not be permitted to assume any other title whatsoever.

"Your committee therefore recommend that a system of examination and registration of midwives should be established, and that for the purpose of admission and examination of women desiring to act as midwives, the General (Medical) Council shall be invited to frame rules for regulating—

"(1) The admission to the register either by (*a*) practice, or (*b*) examination, or by both;

"(2) The conditions of admission to such examinations; and

"(3) The conditions of such examinations.

"These rules and regulations should, in the opinion of your committee, be subject to confirmation by the Privy Council; and in the event of the General Council failing to make such rules as the Privy Council can confirm, your committee recommend that the Privy Council should invite

some other medical body or forthwith cause the rules and regulations proposed in the foregoing paragraph to be framed for the purposes required, and that such rules shall take effect as if they had been made by the General Council and confirmed by the Privy Council.

"Your committee also recommend that the duty of carrying out locally the provisions of the Act that will be required should be placed in the hands of the County Councils. They also are of opinion that greater facilities for the study of midwifery should be provided in workhouses and lying-in hospitals.

"In conclusion your committee desire to refer to the apprehension expressed by certain witnesses belonging to the medical profession, lest their interests might be injuriously affected by an improvement in the status of midwives. The great preponderance, however, of medical and other evidence, having regard to both the authority and number of the witnesses, was to a contrary effect. Your committee, therefore, whilst giving due consideration to the expression of such fears, believe that the suggested injury is not likely to prove serious, and they are of opinion that medical men will not only be relieved of much irksome and ill-paid work, but also that improved knowledge on the part of midwives will induce them to avail themselves more frequently, and at an earlier stage than at present, of skilled medical assistance in time of emergency and danger. On this point your committee had full and substantial evidence."

President's Address at the Opening of the Fifty-fifth Session of the General Medical Council.

At the opening of the 55th Session of the General Medical Council, the President (Sir Richard Quain) spoke as follows :

"The pronouncement already made by the Council on the subject of Midwives is so clear, so decided and ex-

pressive, that I venture here to repeat the following two Resolutions passed in 1889:

"(1) 'That this Council regards the absence of public provision for the education and supervision of midwives as productive of a large amount of grave suffering and fatal disease among the poorer classes, and urges upon the Government the importance of passing into law some measure for the education and registration of midwives.'

"(2) 'That, if any department of Her Majesty's Government were constituted controlling authority in relation to local arrangements made under statute for the licensing and registration of midwives, the Medical Council would, if the Government department so wished, be willing to advise as to the general rules of education, examination, and discipline which ought to be established in the matter; but the Council would not be able to discharge, and would therefore not be prepared to undertake, any duties of detail as to the registration of midwives, or as to the local arrangements for licensing or controlling them.'"—(*Minutes of General Medical Council, from June 1st to December 5th,* 1893.)

Charge of the Recorder to the Grand Jury at the Old Bailey, January 8th, 1894.

In charging the Grand Jury at the Old Bailey on January 8th, 1894, the Recorder said:

"He regretted very much that the registration of midwives was not compulsory. To his mind registration was of the utmost importance, and he hoped that a bill dealing with this subject, which had for some time been before Parliament, would eventually become law. Such a law was necessary in the interests of the poor, who might then look forward to the fact that if registration of a midwife was compulsory there would be some guarantee that she was able to perform her duties. Anyone at present could call herself a midwife, however

ignorant she might be of the very first principles of her duties."—*Times,* January 9th, 1894.

Regulations for Midwives in Foreign Countries.

As regards regulations for midwives in foreign countries, we learn, from a return from Her Majesty's representatives abroad of the laws and regulations with reference to midwives—presented to the House of Commons by command of Her Majesty, in pursuance of their address dated April 16th, 1875 (marked "Miscellaneous, No. 10, 1875—Midwives abroad") the following facts:

In *Austria* (p. 1) the law dates from 1810. Free education is given. The midwife must pass an examination and take an oath. She is not allowed to use instruments, and must summon a doctor in all cases of unnatural or difficult labour.

In *Belgium* (p. 14) the law dates from 1818. A free course of midwifery is given in the largest hospital of each department. The Provincial Medical Council conducts the examinations. The midwife is to conduct "natural confinements," and must not use instruments. If she exceeds her duties she is fined or deprived of her diploma for one year.

In *France* (p. 17) the law dates from 1803. Education is free. Midwives must attend lectures and hospital practice, and pass an examination. Unqualified midwives are fined, and qualified midwives are fined also if they use instruments or fail to call in a doctor if necessary. They may be prosecuted for illegally practising medicine if they attend cases other than confinements. These women are of great use in country districts, and are especially useful to the poorer classes (says the report).

In the *Netherlands* (p. 21) the law dates from 1865. Free education is given in Amsterdam, Rotterdam, and Groningen.

They must possess elementary education, must pass an

examination, must only practise in cases of an undisturbed natural course of parturition, and in all other cases must call in a doctor specially authorised. They may be fined and imprisoned for disobeying these regulations or for practising medicine.

In the *United States* (p. 24) there are no laws.

In *Prussia* (p. 25) the regulations are most precise. Pupils may pay or get free instruction; examinations, registration, and licence are free. They may only conduct natural labours, except where no doctor can be obtained. Unqualified midwives may be fined.

In *Russia* (p. 51) midwives are instructed in venereal diseases as well as in midwifery. They must pass an examination. For practising otherwise than as a midwife they may be fined or imprisoned, and deprived of their licence. Similar penalties are incurred by neglecting to summon the doctor when necessary.

In *Sweden* and *Norway* (p. 67) the law dates from 1810. Free education is given at Stockholm, Gothenburg, and Lund, which is supported by the State. The midwives must pass an examination, and are liable to fine and imprisonment for practising without a licence, as are their employers, and for neglecting to summon the doctor or another midwife when necessary. They are subject to periodical re-examination.

The History of our own Society.

We now come to deal with the history of our own Society in relation to this question. On November 4th, 1870, the Council passed a resolution in favour of the institution of a voluntary examination for midwives (Council Minutes, p. 243). This resulted from a committee under the presidency of Dr. Hall Davis. At the annual meeting of the Society, January 3rd, 1872, the scheme of such an examination, with bye-laws, was presented to the Society and passed unanimously. It is essentially the same as at

present, and the law referring to the granting of the certificates runs thus :—" V. That, on satisfying the Board of Examiners as to her qualifications, the midwife should receive a diploma certifying that she is a skilled midwife, competent to attend natural labours" ('Obst. Trans.,' vol. xiv, for 1872, p. 21).

At the annual meeting, January 6th, 1875, the President (Dr. Tilt) in his address said, "Last year Lord Aberdare and Mr. Stansfeld were in office; they favourably entertained the views repeatedly brought forward by the Society, and they were prepared to bring in a bill for the better education and registration of midwives, when a change of ministry convinced your Council that the question must be left in abeyance. . . . Ours is the only civilised country that has left unregulated the midwifery of the humbler classes, and it is a disgrace to obstetric medicine that there should be no means of preventing an incompetent and drunken woman from assuming the name and the duties of a midwife" ('Obst. Trans.,' vol. xvii, for 1875, p. 33).

In 1873 the Council referred the matter of branch examinations and registration of midwives to a committee, who reported as follows:—"The Obstetrical Society of London, having had repeatedly and urgently brought before its notice the sacrifice of human life and health occasioned by the practice of ignorant midwives, has already instituted an Examining Board for testing the knowledge of women desiring to follow the calling of a midwife, and has granted certificates to those who have satisfied its examiners." It then proposed methods for branch examinations, and for the registration of midwives (Council Minutes, p. 281).

On June 6th, 1877, the President (Dr. West) informed the Society that a deputation had waited upon the Lord President respecting the examination and registration of midwives ('Obst. Trans.,' vol. xix, for 1877, p. 136).

At the annual general meeting, January 2nd, 1878, the President (Dr. West) again referred to the subject as

follows :—"His Grace the Lord President of the Council expressed himself as favourable to the principles which the scheme embodies. It was afterwards laid before the Medical Council, who approved its object. In order to correct various legal and technical imperfections, it was submitted to Mr. Roscoe, the legal adviser of the College of Physicians."

The President then proceeded to deprecate the postponement of a settlement of this question till that of the admission of women to the profession was settled; and he pointed out that if women were admitted to, and even if men were excluded from the medical profession, the poor, especially in the country districts, would be just as ill provided as at present.

He urged the duty of the Society, not as doctors but as citizens, "to secure some guarantee that the poor shall not continue to be exposed to an ignorance and unskilfulness against which the Government of every other civilised country has protected them" ('Obst. Trans.,' vol. xx, for 1878, p. 13).

In 1879 the President (Dr. Playfair) informed the Society at the annual meeting that "the principles of the scheme [for the examination and registration of midwives] not only met with the approval of the Medical Council, but were embodied by His Grace the Duke of Richmond in the Medical Acts Amendment Bill, which, but for the troubles in the East, would, there is every reason to believe, have passed both Houses of the Legislature."

Certificate of the Obstetrical Society.

The following is the form of certificate drawn up by Mr. Roscoe, solicitor to the Society, and hitherto in use. It dates from March, 1887 (Council Minutes, p. 542):

"*Obstetrical Society of London.*

"We hereby certify that has passed to our satisfaction the examination instituted by the

Obstetrical Society of London, and that she is, in our opinion, a skilled midwife, competent to attend natural labour."

(Signatures of President, Chairman, Honorary Secretaries, and Examiners.)

(Undertaking signed by the Midwife.)

"I undertake to abide by all the rules and regulations of the Obstetrical Society with regard to the duties and conduct of midwives, and to submit to the jurisdiction of its Council in the decision of all matters relating to my conduct as a midwife. I further agree that in case I shall hereafter be convicted of any criminal offence, or be guilty of any act or conduct which in the opinion of the Council renders me unfit or unworthy to hold its diploma, the same may be forfeited by a resolution of the Council, in which case I will, on receiving notice in writing of such resolution, to be served either personally or by leaving the same at my then present or last known place of abode in the United Kingdom, forthwith give up such diploma to the President, or to one of the Secretaries for the time being of the Society; and I agree that my name may be removed from the Register of Midwives kept by the Society, and I promise thenceforward to desist from the use of any designation or title implying possession of such diploma."

(Signature of Midwife.
Seal of the Society.)

The Council were expressly advised by their solicitor that no technical meaning attached to the word "diploma," and that it had precisely the same meaning as "certificate."

In 1889 the Chairman of the Board for the Examination of Midwives (Dr. Watt Black) reported that the Society, with the advice of Mr. Roscoe, had added a declaration or sponsio (see above), which each midwife

would have to sign, in which she agrees to submit to the jurisdiction of the Council in all matters relating to her conduct as midwife, and to give up her diploma if the Council shall consider her conduct such as to render her unworthy to hold it. This she signs in a book, and also on her certificate ('Obst. Trans.,' vol. xxxi, for 1889, p. 71).

Correspondence between the General Medical Council and the Obstetrical Society.

On January 4th, 1893, the Council considered the following letter from the Registrar of the General Medical Council:

General Medical Council,
299, Oxford Street, London, W.;
December —, 1892
(*Before December* 16*th*).

Sir,—In reference to the giving of certificates or diplomas in midwifery, the General Medical Council, at its recent session, passed the following resolution, which, in the President's name, I have been directed to communicate to you:

> "That the President be requested by the General Medical Council to point out to the institutions and persons who grant such certificates that the certificate should be expressed in such a form as not to lead to the impression that it is a legal qualification to practise midwifery."

I am, Sir,
Yours faithfully,
W. J. C. Miller,
Registrar.

The following resolution was passed by our Council:

"That the Secretary be requested to reply to the President of the General Medical Council, to enclose a

copy of the diploma of the Society, and to point out that it is merely an expression of opinion on the part of the Society, and that it does not express any opinion as to the competence of the midwife, except so far as concerns natural labour" (Council Minutes, p. 673).

At the annual meeting, February 1, 1893, the Chairman of the Board for the Examination of Midwives (myself), after quoting the proportion of failures in successive periods, and their steady diminution owing to increasing competence of the candidates, defined the scope of the Society's certificate as follows:

"When it is remembered that the Society's certificate is merely an expression of opinion by the Society that the holder of it is competent to attend natural labour, and that no legislation has taken place, either for the purpose of preventing uncertified persons from calling themselves midwives, or even for registering midwives, it is plain that the work which the Society has voluntarily undertaken and carried on for twenty-one years is highly and increasingly appreciated by the midwives and by the public generally" ('Obst. Trans.,' vol. xxxv, for 1893, p. 46).

On April 4th, 1894, the Council considered a letter from the Lancashire and Cheshire Branch of the British Medical Association, protesting against the promotion of legislation for the registration of midwives (Council Minutes, p. 696).

On July 4th, 1894, the Council considered the following resolution from the General Medical Council of May 22nd:—"That, in the opinion of the Council, to issue to any person not legally qualified for registration, any certificate of competency or other document, so framed as to bear a colourable resemblance in appearance or phraseology to a diploma conveying a right to act as a medical practitioner, is a proceeding which directly contravenes the spirit of the medical Acts, and is accordingly liable to be visited with the condemnation of the Council. The President is, therefore, requested to repeat a warning, already given to certain institutions, and to urge the registered practitioners

connected with institutions granting the certificates to nurse-midwives to carefully reconsider the terms in which they are framed, so as to bring them into harmony with this resolution."

To this (which was apparently a circular sent to a large number of certifying institutions without distinction, in which no statement appears that the Medical Council had anything to find fault with in the certificate of this Society) the following reply was sent :—" That the General Medical Council be informed that, with regard to the printed resolution passed May 22nd, a copy of which was sent to the Obstetrical Society, the certificate of the Society was drawn up many years ago with a view to avoid the possibility of its being used as a diploma conveying a right to act as a medical practitioner ; that it has been subjected to legal criticism on this point, and has been framed in accordance therewith. The Council of the Obstetrical Society feel sure that the General Medical Council appreciate the care which has thus been exercised in accordance with the views expressed in their resolution " (Council Minutes, p. 702).

On Monday, December 3rd, 1894, the General Medical Council passed the following resolutions :

(*a*) " That the Council, being of opinion that certain documents issued by various societies or persons as diplomas of education and examination in midwifery are ' colourable imitations ' of diplomas conferring a legal right to admission to the Medical Register, and both contravene the spirit of the medical Acts and are calculated to deceive the public, hereby give notice that from the present date the issue of such ' colourable imitations ' by registered practitioners will be regarded as conduct infamous in a professional respect."

(*b*) " That in the opinion of the Council the form of the certificate now before the Council, and purporting to be granted by the Obstetrical Society of London on July 20th, 1894, is such that it may be regarded as a document coming within the purview of the foregoing

resolution; and that this opinion be communicated to the President and Council of the Obstetrical Society" ('Lancet,' December 8th, 1894, p. 1385).

This action was taken at the instigation of the Lancashire and Cheshire Branch of the British Medical Association, whose object is stated above (ibid., p. 1383).

The Section of the Medical Act.

The section of the Medical Act referred to by the General Medical Council runs as follows (Medical Act, 1858, 21, 22 Vict., cap. xc, § 29):—"If any registered medical practitioner shall be convicted in England or Ireland of any felony or misdemeanour, or in Scotland of any crime or offence, or shall after due inquiry be judged by the General Medical Council to have been guilty of infamous conduct in any professional respect, the General Medical Council may, if they see fit, direct the registrar to erase the name of any such practitioner from the register."

In a debate in the General Medical Council, May 22nd, 1894 ('Brit. Med. Journ.,' May 26th, 1894, p. 1138), Mr. Wheelhouse claimed that "an attempt was made to evade the conditions of the Medical Act of 1886, and to institute an entirely new class of practitioners, who were only to be partially educated, and in midwifery only."

Dr. MacAlister said the Council had no power to prevent persons practising without a diploma, and it was preposterous that they should be asked to say that any person giving a testimonial to another person was guilty of infamous conduct. Such certificates gave no legal qualification to practise, and it was never intended that they should; they were simple testimonials that in the opinion of certain gentlemen a person was qualified to do a certain thing. He had constantly given testimonials to his pupils that in his opinion they were qualified to act as house surgeons or house physicians, but should be very sorry indeed to be charged with infamous conduct for so cer-

tifying to his personal knowledge. These certificates were of the same nature. What they were really asked to do was to say that no woman should help any other woman in her labour unless she had a licence to practise. That mere statement was sufficient to show that the whole agitation was preposterous. There were between 10,000 and 15,000 midwives at this moment, and they could practise, whatever the General Medical Council or the Obstetrical Society might do to prevent them. Was it better or worse that these women should have absolutely no education or that some of them should be educated? To prevent any examination or testing of their somewhat imperfect education was to stop that education altogether. The resolution, as proposed, was itself an illegality, and it would not be sustained in the law courts.

Attempt of the General Medical Council to extinguish the Licence of the Royal College of Physicians.

As evidence that the activity of the Medical Council has not always been well advised or in accordance with the law of the land, we may refer to an action recently brought against it by the Royal College of Physicians, with reference to the extinction of the licence of the latter body.

Queen's Bench Division, March 3rd, 1893. Before Mr. Justice A. L. Smith.

The President and College or Commonalty of the Faculty of Physic in London *v.* The General Council of Medical Education and Registration of the United Kingdom.

The decision of the Court was that the College was entitled to judgment with costs ('Brit. Med. Journ.,' March 11th, 1893, p. 550).

Opinions of the Medical Press.

As regards the opinions of the medical press, the following may be quoted :

The 'British Medical Journal,' in an annotation of March 22nd, 1890, p. 682, says :

"It may be remembered that many years ago the South-eastern Branch of the British Medical Association most carefully considered this question, and came to the conclusion that a class of educated midwives would be of great advantage to poor women, and would relieve medical men of a large amount of hard and unremunerative midwifery practice. The whole profession may be said to be in favour of the licensing and registration of midwives, and nothing but parliamentary plethora prevents the passing of an Act which public safety so urgently demands. The question of restricting the action of midwives is an important one. Their function is to attend natural labour, and to know in what cases it is their duty to send for medical help. The Obstetrical Society of London has printed regulations describing exactly all the conditions before, during, and after labour which render it necessary for a midwife to seek assistance. In fact, it may be confidently stated that every detail connected with the amelioration of the present condition of midwives has been thoroughly thrashed out, and that the whole subject is over-ripe for action."

The 'Lancet,' in a leading article of May 24th, 1890, p. 1131, points out that it is very questionable whether doctors would in any sense be injuriously affected by a legalised examination and registration of midwives ; that midwives as an institution are older than doctors ; a large proportion of the poor are unable to pay doctors' fees, and that they run awful risks at the hands of pretended but unauthorised midwives.

"What does the public know of what transpires in the lying-in chamber of a woman who has 5*s*. or 7*s*. 6*d*. to

spare for a midwife's fee? There is nothing more pathetic in the world than the suffering that goes on in such rooms, unless it be the uncomplaining patience with which it is borne."

Before proceeding to deal with the evidence which I have collected and now brought before the Society, it may be interesting to our Fellows to learn the statistics of our midwifery examination from its institution in 1872.

Statistics of the Examination of the Obstetrical Society.

Year.	Applied.	Passed.	Failed.	Withdrew.
1872	8	6	2	—
1873	12	11	1	—
1874	4	4	—	—
1875	3	2	1	—
1876	4	3	1	—
1877	4	4	—	—
1878	6	5	1	—
1879	13	12	1	—
1880	24	22	2	—
1881	44	39	5	—
1882	42	37	5	—
1883	64	53	11	—
1884	63	49	14	—
1885	82	68	14	—
1886	102	80	22	—
1887	127	96	29	2
1888	153	127	22	4
1889	170	143	25	2
1890	207	159	43	5
1891	258	204	52	2
1892	289	252	34	3
1893	339	296	40	3
1894	432	390	40	2
	2450	2062	365	23

Total number on Register, including January, 1895 = 2166.
Total number struck off = 4.

Schedule issued to Candidates by the Society.

The following is the Schedule issued to candidates by the Society:

Obstetrical Society of London.

Regulations for the Examination of Midwives.

The Obstetrical Society of London grants a Diploma, certifying that the bearer is a skilled Midwife, competent to attend Natural Labours, on the following conditions:

Each Candidate must submit to the Honorary Secretaries of the Society—

(*a*) Sufficient evidence of good moral character.
(*b*) A Certificate showing that she is not under Twenty-one years of age.
(*c*) Proof of having personally attended not less than twenty-five labours under supervision satisfactory to the Board of Examiners.

Each Candidate will be required to pass (1) a written and (2) an oral and practical Examination in the following subjects:

(*a*) The Elementary Anatomy of the Female Pelvis and Generative Organs.
(*b*) The Symptoms, Mechanism, Course, and Management of Natural Labour.
(*c*) The indications of Abnormal Labour, and the emergencies which occur in practice.
(*d*) Hæmorrhage, its varieties, and the treatment of each.
(*e*) Antiseptics in Midwifery, and the way to use them.
(*f*) The management of the Puerperal state, including the use of the Thermometer and the use of the Catheter.
(*g*) The management (feeding included) of new-born Children.
(*h*) The duties of the Midwife with regard to the Patient, and with regard to the seeking of Medical advice.

The written Examination is held at the Society's Library on the second Wednesday of the months of January, April, July, and October, at 8 p.m.; the Practical and Oral Examination from one to two weeks later.

The Fee for the Examination is One Guinea: in the event of a Candidate failing to pass, half the fee will be returned.

Successful Candidates will be required to sign the following Declaration:

To _____

President of the Obstetrical Society of London.

I undertake to abide by all the rules and regulations of the Obstetrical Society with regard to the duties and conduct of Midwives, and to submit to the jurisdiction of its Council in the decision of all matters relating to my conduct as a Midwife. I further agree that in case I shall hereafter be convicted of any criminal offence, or be guilty of any act or conduct which in the opinion of the Council renders me unfit or unworthy to hold its Diploma, the same may be forfeited by a resolution of the Council, in which case I will, on receiving notice in writing of such resolution, to be served either personally or by leaving the same at my then present or last known place of abode in the United Kingdom, forthwith give up such Diploma to you or to one of the Secretaries for the time being of the Society, and I agree that my name may be removed from the Register of Midwives kept by the Society; and I promise thenceforward to desist from the use of any designation or title implying possession of such Diploma.

Further information may be obtained on application at the Society's Library, 20, Hanover Square, W., between the hours of 1.30 and 6 p.m.

1894.

OBSTETRICAL SOCIETY OF LONDON.

Examination of Midwives.

This Schedule is to be filled up and returned to the Honorary Secretaries, Obstetrical Society, 20, Hanover Square, W., together with the Examination Fee (21*s.*), at least fourteen days before the date of the Examination.

Name (Full Christian and Surname to be stated).

Age.

Married, Widow, or Single.

Present Address.

Permanent Address.

(*a*) Certificate of Good Moral Character.

(To be filled in and signed by some responsible person, whose address must be stated, who can vouch for the character of the Candidate.)

(*b*) Certificate of Age.

(A Certificate of Registration of Birth should be sent in; or, if that cannot be obtained, one must be entered here showing that the Candidate is not under 21 years of age, and signed by some responsible person whose address must also be stated.)

(*c*) Certificate of Attendance on Labours. *I certify that the above-named has attended not less than twenty-five labours.*

Signed _____

(No Labour can be counted among the 25 certified unless the Candidate has repeatedly examined and watched its progress, and has diligently attended the Lying-in for at least ten days.)

Review of the History of the Movement for the Regulation of Midwives.

We have seen, with regard to the *antiquity of midwives*, that they have been in existence from the earliest prehistoric times; that in England we have records of them from A.D. 1470; that most of our celebrated obstetricians, including the great Harvey himself, have taken a practical interest in them; and that our own Queen was the first Queen of England not attended by a midwife.

We have seen that *movements in favour of their examination and regulation* date from A.D. 1616; that in 1869, 30 to 90 per cent. of poor women in English villages were attended by them. As regards *recent testimony in favour of the examination and registration of midwives*, we have seen that the *General Medical Council* in 1872 (Drs. Acland and Stokes), in 1889 (resolution of Council), and in 1893 (address of Sir Richard Quain, the President) have declared that it is highly desirable.

We have seen that a committee of the *Royal College of Physicians* in 1891 pronounced in favour of it; and that *Select Committees of the House of Commons* in 1892 and 1893 reported that it was desirable. The latter stated that "amongst the poor and working classes, both in the country and in towns, the services of properly trained midwives have been eminently successful and of great advantage to the community; *as proved by the evidence before your committee, the services of midwives are a necessity.*"

In 1894 the *Recorder of London* stated in his charge that "he regretted very much that the registration of midwives was not compulsory."

The Question whether Midwives are a Good or an Evil is not discussed.

With the question whether midwives are a good thing or a bad thing I do not intend to deal to-night. My address is already long enough. I would merely remark that the quotation of percentages of mortality proves very little by itself, and that much more than this is needed to prove that the poor fare well or ill in their confinements in accordance with the greater or less proportion attended by doctors.

I have also quoted no figures to prove that the poor fare well or ill in proportion to the amount of skill possessed by those who attend them, whether doctors or midwives.

If statistics should appear to show (as they might conceivably be made to show) that, among the poor attended by midwives, the less instructed were the midwives the better were the results, I, for one, would not accept the conclusions, inconceivable as they would be to me.

It may, however, be almost taken for granted that such an absurd position is not likely to be adopted.

To the *various bills* introduced with this object I need not again refer.

As regards *our own Society,* we have seen that a movement was commenced in 1870, doubtless in consequence of the request of the Registrar-General in 1869 already quoted, and an examination instituted in 1872, since which time no less than 2450 women have presented themselves for examination, and more than 2000 have been granted certificates.

The Following Propositions appear to be established.

1. *Any person is at liberty by the law of the land to render aid to any other in time of sickness, if desired.*

2. *Any person is at liberty by the law of the land to receive such aid from any other.*

3. *Unskilled aid leads to lamentable consequences to poor mothers and children.*

4. "*Midwives are a necessity.*"

It follows that midwives, who are a "necessity," must either be unskilled with lamentable consequences, or skilled to render services "eminently successful, and of great advantage to the community."

It also follows that the supply of skilled midwives can only be maintained by some method securing at least a minimum of experience and skill.

As regards the *experience of examination of midwives and medical students,* my own judgment is that, within much narrower limits, midwives who pass our examination give evidence of theoretical and practical knowledge which would not disgrace students who pass the conjoint examination; this is also the opinion of all of whom I have asked this question—and they are many.

The Question is not whether Midwives shall exist, but whether they shall be as Bad or as Good as possible.

To put the question briefly, absence of examination and registration of midwives means wide-spread loss of life and health to mothers and children; for not only are midwives a "necessity," but there is no power to prevent any of the Queen's subjects from acting as a midwife.

The opposition which has sprung up aims at the abolition of midwives. But it is quite beyond the power of the agitators to do this, and they know it. What they think they can do is to prevent their examination and registration, and they have aimed at our Society as the principal obstacle in their way. As we have seen, this attack, if successful, would merely result in the destruction of life and health of many poor mothers in England.

Is it too late to appeal to those who have joined this agitation with insufficient knowledge to consider the

misery entailed by the infection conveyed by such women as would alone remain, and the nameless horrors perpetrated by them?

Why the Society has interested itself in the Question.

Such men may ask why our Society ever took up the question, and why it was not content to "mind its own business."

Our reply would be that we took it up because, in the absence of any State regulations, which we have begged for from the beginning, we were the most competent body to do so, that we had already been applied to by the Registrar-General in connection with the subject of infant mortality, and that a crying need existed. As regards "minding our own business," it is not too much to say that the greatness of England in the extension of the empire, in the establishment of hospitals, and in all good work, has simply consisted in not "minding one's own business" in this sense.

As regards the saving of life, the plea of the first murderer was "Am I my brother's keeper?" but perhaps Arthur Hugh Clough's "eighth commandment" in his "modern decalogue" is more to the point:

> "Thou shalt not kill, but need'st not strive
> Officiously to keep alive."

The object of our Society has all along been the encouragement and diffusion of knowledge in all that concerns the science and art of obstetric medicine. For whose sake? Purely for that of our countrywomen.

The Interests of the Poor are the only Interests Worthy of Consideration.

As doctors, we have a right to exist only so long as we are required. Midwives have precisely the same

claims. If they are required, they will exist; if they cease to be required, they, like us, will cease to exist.

Doctors were made for the sick, and not the sick for doctors.

A patient is a person who requires a doctor; a doctor is not, in the same sense, a person who requires patients. A patient is not, primarily, an organism for excreting so many guineas or shillings per annum, as an aphis exudes syrup at the titillation of an ant, or a cow secretes milk under the blandishments of a dairymaid.

This is a fact often forgotten.

If a poor woman requires a doctor for her confinement, she can have one. If she prefers a midwife, she can have one,—trained, certificated, and comparatively safe; or she can have one untrained, uncertificated, ignorant, septic, and fatal! Are there really any of her countrymen who would run the risk of leaving her only the latter alternative? As to her freedom of choice, no legislative body in the world would hand her over, tied hand and foot, to the mercy of *any* profession. She is free, and she can have, and will always be free to have, whom she chooses.

In order to thus limit her choice, it would be necessary to make it penal for her to employ any but a doctor, or to make it penal for anyone but a doctor to attend her. Does anyone imagine this for an instant to be possible?

I challenge agitators to put this fairly forward in a bill, and to speak with their enemies in the gate.

I am sure that many who have joined in this attack have done it in ignorance. This is the age of caucuses and wire-pullers. Men are too busy to read for themselves and think for themselves; they too easily answer leading questions in the affirmative, and sign petitions without understanding them.

Another element to be reckoned with is indifference. Men are too busy to be interested in anything outside their own daily work, and public opinion represents an enormous dead weight; when aroused its moving force is irresistible. I have no doubt of the verdict of the

country if once it could be got to take an interest in this question. Public opinion can be got to take an interest in the poor and suffering, but is unlikely to become enthusiastic on behalf of the vested interests of any profession. For the interests of doctors or of midwives, apart from their usefulness to the sick, and especially the poor, it cares not one farthing; and it is quite right.

I am loth to include selfishness among the obstacles. And yet the correspondence which has flooded the journals not seldom betrays the cloven hoof.

The "competition of midwives" is a phrase one often hears. It takes two to compete; and if it is wrong for a midwife to compete with a doctor for small fees, is it dignified for the doctor to compete with the midwife?

Medicine a "Noble" Profession.

Besides this, our profession claims, or accepts without protest, the title of "noble" which is so often bestowed on it. To what does it owe its nobility? Surely to the unselfishness which is one of its best traditions.

Our profession glories in postponing its private interests to the good of the public. It has abolished profit-making by secret remedies, and has come to look upon it as really (and not in the sense of the Medical Council) "infamous." Why is it more infamous for a medical discoverer to make money out of his secret knowledge than for a man in business, such as a brewer, to do the same?

Simply on account of this claim of "nobility."

In what other profession can you parallel the enthusiastic propagation of the great class of remedies which began with Jenner's vaccination, and have been so marvellously extended at the present day; or of the wholesale benefits of Preventive Medicine?

It is to be remembered that every such improvement means, in the first instance at least, loss of income to the whole profession. And yet no medical man has ever been known to protest against measures for the preserva-

tion of life and health, "though it were to his own hindrance."

I confess that the bacillus of cholera seems to me to stand on the same footing as those of septicæmia, and that the profession whose glory it is to endeavour to destroy the one should not regard with levity the chances of the spread of the other.

I have said that our profession stands alone in its attitude in this respect. Yet I imagine that other professions, who make no such claim to pre-eminent virtue—as, for example, the legal profession—would stand aghast at a proposition which would be likely to set their fellow-countrymen by the ears, even if they saw their own profit in such an event.

I think that there is little "nobility" to be seen in the present agitation.

Registration of Midwives the Best Protection of the Poor.

The malpraxis of midwives is an argument often used against them. For the malpraxis of unregistered midwives there is no remedy but the common law. Against the malpraxis of registered midwives the undertaking signed by each of our midwives (quoted above) protects the poor, even where the law could not touch the offender.

Registration of Midwives the Best Protection of Medical Men.

The same undertaking guards doctors against the usurpation of medical functions, such as prescribing, by midwives. Any of our midwives so acting is liable to be struck off the register and deprived of her certificate.

These irregularities on the part of midwives are simply the result of absence of proper control.

Over uncertificated midwives no control is possible so long as they keep clear of the law.

Over our own midwives we have a very considerable

hold by means of the undertaking signed by each successful candidate, and quoted above.

If offences by midwives holding our certificate were only reported to us we would deal with them.

The Length of Training of Midwives.

Among many arguments against the registration of midwives may be mentioned one—that the present length of their training is insufficient. This is purely a matter of money. The midwives are poor women, and find it difficult to procure the money to pay for their present training and examination. In many cases this is provided, partly or entirely, by their more wealthy friends, and often with the view of acquiring the services of a midwife for a country district. In many foreign countries the expenses are defrayed by the State.

Until midwives are subsidised, either by the State or by some other extraneous body, it is useless to expect an increase in the length of their training.

The means of subsistence must be provided somehow: if by the midwives themselves, the course of training must necessarily be short; if it is desired to lengthen it (an object much to be wished), the money must be provided by extraneous aid.

But some training is better than no training at all, and these are the real alternatives at the present time.

A regulation by which the State should insist on longer training, and at the same time make it possible, is much to be wished. A system by which midwives in a district should be placed under the direction of a leading local practitioner would be beneficial both to the poor and to midwives. We should then cease to hear complaints of midwives acting as medical women.

It must, however, be remembered that midwives holding the Society's certificate are already under control, if complaints were only forwarded to the Society from which they hold their certificate.

If irregularities are as rife as some would have us believe, why do they not join with us in promoting the only method of stopping them—proper control?

A pushing, usurping midwife can, however, only be controlled when she is in some way recognised; and the only way to defend doctors against the privateering of midwives is by registration.

The Interests of Doctors not prejudiced by properly Regulated Midwives.

But we must remember that the Select Committee (quoted above), after hearing the evidence for and against the proposition that midwives injure doctors, pronounced emphatically that the reverse was the case, and it is within the knowledge of Fellows that midwives are, in some districts, actually provided by doctors, to help them with cases of natural labour among the poor. And even some of our medical schools make use of them ('Guy's Hospital Gazette,' February 9th, 1895, p. 48).

It is hard to imagine that the few shillings which is all that many of the poor can afford for a confinement can in any sense repay a medical man for the time expended, or that the bodily handing over of all such cases to trustworthy midwives would be anything but an unmixed relief to the hard-worked doctor of poor districts. I expect the real difficulty is the fear of the loss of a connection, in the absence of a universal agreement in a district to this effect, loyally kept.

The committee, however, after hearing all the evidence on both sides, stated its opinion strongly as above.

"In conclusion, your committee desire to refer to the apprehension expressed by certain witnesses belonging to the medical profession, lest their interest might be injuriously affected by an improvement in the status of midwives. The great preponderance, however, of medical and other evidence, having regard to both the authority

and number of the witnesses, was to a contrary effect. Your committee, therefore, whilst giving due consideration to the expression of such fears, believe that the suggested injury is not likely to prove serious, and they are of opinion that medical men will not only be relieved of much irksome and ill-paid work, but also that improved knowledge on the part of midwives will induce them to avail themselves more frequently, and at an earlier stage than at present, of skilled medical assistance in time of emergency and danger. On this point your committee had full and substantial evidence."

The Motives of our Society.

The motives of our Society in instituting and carrying on this examination have been (I state it without any qualification) absolutely unselfish and disinterested. We began the work because there was no other competent body to begin it; we have continued it purely from public spirit. We have sought again and again to be allowed to transfer it to a State-regulated machine.

For years our examiners did the work without a farthing of remuneration, generally on a night which was their only relief in the course of the tedious task of examining for the conjoint Board.

Our motives in this respect have been tacitly acknowledged except by an occasional malignant writer to one of the journals.

To any such unworthy inuendos the answer is plain—the Society never ceases to beg to be relieved of its responsibilities in this respect, and of its emoluments. Such, gentlemen, is our infamy.

The Action of the General Medical Council.

The action of the General Medical Council is still an enigma to us. It might be conceivable that its opinion

was that the abolition of midwives was desirable, had it not, in common with all the highest and most competent bodies, repeatedly and strongly stated that the examination and registration of midwives was highly desirable, thus emphatically endorsing the work of our Society.

But, as its verdict has over and over again been in favour of such work, it is a little difficult to understand so violent a deviation as its last communication.

Perhaps this is the parable of the importunate widow over again; and perhaps it has, in a moment of annoyance, vented its wrath, not against those who have troubled its repose, but against an unconscious and innocent object.

That it, like other representative bodies, is afflicted with the restlessness of "Irish members," who are not always Irish men, is quite possible.

That it is not in possession of the facts or history of the question is almost certain. It is, indeed, scarcely to be expected of a body containing, at the present time, not a single English obstetric physician.

We do not yet know of what we are accused.

That the Act of Parliament ever contemplated so violent a distortion of plain English as is implied by the application of the word "infamous" to work like ours, undertaken twenty-three years ago, and carried out at the cost of much time, thought, and hard work, in a public-spirited and self-denying manner ever since, is inconceivable.

That it should threaten to apply such a word to a body of men such as those who have been mainly responsible for the work, carries, I venture to think, its own refutation and condemnation.

That those who framed the Medical Act ever contemplated the classification of (alleged) defects in a certificate together with murder, theft, and unnatural offences is unthinkable.

I have little doubt that, when the Medical Council realises that it is asked to play the rôle of a puppet of a party of interested practitioners, its own sense of dignity, and of the purposes for which it was created,

will come to its aid; indeed, this is plainly foreshadowed in one of the speeches which I have quoted.

If the Medical Council is free to call any person or any act "infamous" when it chooses, the position of every medical man is most unenviable. What is to prevent the application of this word to the shape of a collar or the colour of a tie?

But it is incredible that the Legislature ever intended to hand over any profession to an arbitrary and irresponsible tyranny such as this would be. Indeed, in a recent trial in the Court of Appeal, February 23rd, 1894, the Master of the Rolls adopted a definition prepared by Lord Justice Lopes as applicable to the case; namely, if a medical man in pursuit of his profession had done something with respect to it "which would be reasonably regarded as infamous by his professional brethren of repute" (Allinson *v.* Gen. Med. Council).

In the face of the work which our Society has done, and of the names of the men who have done it, including practically all the leaders of our branch of the profession in London, it is too absurd to think that our action, or their action, would have the remotest chance of "being regarded as infamous by their professional brethren of repute."

Surely, in any movement for the saving of the lives of poor women, the General Medical Council ought to stand side by side with those who for twenty-three years have been working for this object in a way which ought to command their respect, rather than to run the risk of appearing for a moment as the partisans of a Trades-union. That it should appear for a moment in such a light has been a great and painful shock to us.

To have such an epithet as "infamous" applied to us makes us no nearer infamy than before, though I confess that I imagined that work such as ours, carried on merely with the object of helping and protecting the poor, deserved another name.

But I believe that neither Sir John Williams, Dr. Watt Black, nor I, who have acted firstly as Chairmen of the Midwifery Board, and afterwards have been called to the Presidential Chair, and are therefore, perhaps, the most "infamous" among "infamous" men, feel the least ashamed of our work, conscious as we are of our own integrity, and of the great injustice which has been done to as all. As regards the form of our certificate, if the Medical Council had told us that they thought it open to objections, we should have at once done what we are now doing, asked for its criticism with a view to their removal.

To have helped us to remove any cause of offence would have earned our gratitude.

I cannot but think that when it has mastered the subject, and had time to think, the Medical Council will regret what it has done, not only towards men as honourable as any of its members—whose life and work are well known to it,—but to a meritorious and public-spirited society.

Meanwhile the agitators may rest assured that it has not seen the last of our examination, nor of us.

It is a significant fact that the number of candidates for our last examination has hardly ever been exceeded, not less than 114 women having presented themselves, and that in spite of our having held our certificate in abeyance.

If there is one thing certain in the world, it is the ultimate triumph of right. It may be opposed—it may be misunderstood—it may be reviled—it may have to suffer; but—

MAGNA EST VERITAS, ET PRÆVALEBIT.

Since the above was written the following communication has been received from the General Medical Council.

General Council of Medical Education and Registration of the United Kingdom,
299, Oxford Street, London, W.;
March 1st, 1895.

Sir,—In answer to your letter of January 14th, 1895, I have to inform you that the Executive Committee of the General Medical Council has passed thereon the following resolution (whereof you will find a copy on the next page).

I am further directed to inform you that the Committee passed, in regard to certain other Certificates that had been submitted to the Council, the following resolution (whereof you will also find a copy on the next page).—I am, sir, yours faithfully,

W. J. C. Miller, Registrar.

Dr. William Duncan,
Hon. Sec. of the Obstetrical Society of London.

Resolved—"That the Executive Committee are of opinion that the words in the diploma 'a skilled midwife competent to attend natural labour' are open to legal objection, seeing that under the Medical Act (1886) Midwifery is one of the three branches in which a regular practitioner must pass an examination in order to obtain a registrable qualification.

"The above-cited words suggest that the holder has a registrable qualification. This both contravenes the spirit of the Medical Act of 1886, and is calculated to deceive the public.

"Again, the formal character of the document, which is described on its face as a diploma, is fitted to deceive the more ignorant part of the public,—that part which most needs protection.

"That the Executive Committee request the President

and Council of the Obstetrical Society of London to inform the General Medical Council, within one month, what steps they have taken to bring their certificate within the terms of the resolution of the Council."

Resolved—"That as this Council has been instituted to regulate the education of practitioners in medicine, surgery, and midwifery, as well as to enable the public to distinguish between qualified and unqualified practitioners, the Executive Committee cannot approve of any document professing to qualify persons for any practice in medicine, surgery, or midwifery, issued by any body or institution which is not a medical authority under the Medical Acts."

The Executive Committee further declare that medical practitioners, who sign such documents, will be liable to the censure of the Council in accordance with the following resolution passed by the Council on May 22nd, 1894 ('Minutes,' vol. xxxi, p. 45).

"In the opinion of the Council, to issue to any person not legally qualified for registration, any certificate of competency or other document, so framed as to bear colourable resemblance in appearance or phraseology to a diploma conveying a right to act as a medical practitioner is a proceeding which directly contravenes the spirit of the Medical Acts, and is accordingly liable to be visited with the condemnation of the Council."

The Council of the Society has already taken steps with the view of removing all causes of offence, now for the first time specified, from its certificate. This it would have done in the first instance, had it received the necessary information. In doing so, it by no means acknowledges that such causes of offence are well founded.

Dr. Watt Black moved—"That the thanks of the Society be given to Dr. Champneys for the inaugural address, and that he be requested to allow it to be published in the 'Transactions.'"

Dr. Herman seconded Dr. Watt Black's proposal, and asked the Fellows present to carry it by acclamation.

Dr. GRIFFITH asked to be allowed to suggest an addition to the resolution proposed by Dr. Black, namely—"That the very able address which they had just heard should, when printed, have a much wider circulation than amongst the Fellows of the Society only, that copies should be sent to every member of the General Medical Council, and that it be left to the Council of the Society to determine to whom else it would be advisable to send it." The address was, in his opinion, a complete answer to the agitators and to the General Medical Council, and, except on two technical points, a complete defence of the action of the Society in any legal proceedings that might ensue. In Dr. Griffith's opinion the General Medical Council were placed, by the communication just received from their Executive Committee, in a position from which they would find it very difficult to emerge with dignity and without further loss of prestige. The address could not fail to make clear to each member of the Council the false position into which they are being led.

Dr. POTTER seconded Dr. Griffith, and suggested that copies of the address should be sent to members of Parliament also.

Dr. HERMAN suggested that before this was done the Society should wait to see what the result of the consultation with legal advisers was in regard to their position.

The PRESIDENT said he would like to have copies printed ready, and choose the time for their circulation.

Dr. HERMAN put this to the meeting, and it was agreed.

THE DISINTEGRATION OF ORGANIC TISSUE BY HIGH TENSION DISCHARGES.

By J. Inglis Parsons, M.D., M.R.C.P.

These investigations have been undertaken with the object of improving the treatment of malignant disease by interrupted voltaic currents, which I first described in the 'British Medical Journal' for April, 1888. In view of the experience which I have gathered since that time, I should say that at present the rôle of electricity as a method of treatment, except for small ulcers, is to follow after excision when nothing more can be done by the knife, and recurrence has occurred.

A further limitation is imposed on this method. In some cases, on account of the position of the growth, a current sufficiently powerful to injure the tumour cannot be used. The difficulties of the subject are so great that it will probably take another ten years or more before the subject can be worked out, and a final verdict given.

As a result of these investigations I am at last able to demonstrate with the microphotos placed before you, that organic tissue can be disintegrated throughout the path of a current, without appreciable heat or caustic action. Before describing the experiments by which this has been achieved, I will first briefly go over the various steps which have led me to investigate the action of high tension currents.

In a paper published in the 'British Gynæcological Transactions' for 1888, I described some experiments into the effect on fibroid tumours produced by the constant current. It will suffice to say that as a result of these

investigations I came to the conclusion that the destructive action of the constant current is confined to a small area round the poles. There probably is some alteration produced in the tissues between the poles by the transport of elements, but it is not sufficient to injure the vitality of carcinoma, although it will sometimes cause degeneration of a fibroma. For instance, if two needles are inserted into a growth six inches apart, and a constant current of 200 milliampères is turned on for ten minutes, the tissues within a radius of half an inch round the needle points can be seen by the naked eye to be more or less destroyed by caustic action. But the remaining five inches of growth lying between the needles show no alteration even when examined under the microscope. It is obvious, therefore, that the utility of the constant current is limited in scope, because firstly, the area destroyed is small, and secondly, because within that area the destruction is much greater than required to produce devitalisation and atrophy. Instead, therefore, of relying upon electrolysis and the caustic action of the current, I decided to investigate the disruptive action of electricity produced by sudden discharges.

From this I expected two advantages: firstly, that the current would injure the whole of the cells between the needles instead of only those close to the needle points; secondly, that the cells thus injured would gradually succumb, and be followed by fatty degeneration and absorption rather than necrosis.

It appeared to me more than probable that the sudden impact of a powerful discharge from a voltaic battery would produce the desired effect.

This expectation was in part realised, and an arrest in growth and some shrinkage, showing there had been absorption, took place in many cases, while pain was always relieved or abolished. The results, however, varied. In some cases the growth seemed to be easily injured, while others recovered, and their progress was then only retarded by the treatment. As almost all these cases

were beyond further operation by the knife, it is difficult to form an exact opinion of the benefit derived. Many cases were weakened by the continual discharge from large ulcers, before the treatment was commenced. Some were at a late stage, when any result is likely to be vitiated by the presence of metastatic deposits. In other advanced cases the ramifications of the growth rendered it impossible to treat the whole of the disease.

In order to cope with these resistant cases, the strength of the current was raised, but no corresponding advantage was obtained. The increase of quantity caused heating of the needles and increased caustic action at the points, and the destructive action became unequal. That is to say, it was much greater at the poles than in the region between them.

The success obtained so far, although not brilliant, was sufficient to stimulate me to further effort.

At this point of my investigations I arrived at three conclusions :

1st. That the alternating voltaic current in sufficient strength did more than the constant current, in that it caused an injurious action on living cells throughout its path.

2nd. That the injury to living cells was not sufficient in all cases to produce the desired result, viz. atrophy.

3rd. That if to surmount this difficulty the strength of the current was further added to, the increased quantity of electricity caused too much heat and caustic action round the needle points, and was followed by sloughing.

Now although heat and caustic action are extremely valuable for ulcers and small nodules involving the skin, the sloughing produced by it is unsuitable for any but small growths, and did not reach the ideal method which I had tried to arrive at, viz. to produce atrophy without sloughing.

I had, therefore, to reconsider the problem, and to find out whether organic tissue could not be injured sufficiently

to produce atrophy without appreciable caustic action and heat.

It then became apparent to me on observing the mechanical destructive effects of high-pressure currents, that I must rely more upon a high E. M. F. than on the quantity or strength of the current. With this object in view, I decided to try the effect of a transformer by which quantity is turned into pressure.

The increase in pressure would cause a greater disruptive action, while the diminution in quantity would reduce in proportion the caustic action at the poles. I hoped by this means to obtain an equal destructive action from the point of entry to the point of exit, without any excess at the points of the needles.

A transformer could be worked in two different ways, either by the alternating current from a dynamo in the primary circuit, or by the use of a current from a battery interrupted as in the ordinary induction apparatus familiar to all of us. The advantage of the current from the dynamo is that the alternations are equal; on the other hand, if taken from the main in the streets they are too rapid for operations. When a powerful current is being used on the body it is necessary in some cases to wait between each interruption of the current, especially if the application is made near the cardiac region.

In addition to this, a special dynamo to give the required pressure—and capable, too, of giving single alternations at a time—would be difficult to construct and very heavy to move about.

The objection to the faradic induction coil is that the alternations are not equal, and they are also liable to variations in strength because the interruptions are made by a rheotome.

Although this variation occurs, I found that when several interruptions were employed the average effect produced was nearly always the same provided the batteries were fully charged.

I therefore decided to investigate the action of a

powerful induction coil. The result of these investigations I place before the Society to-night.

The next point to consider was the rheotome. In the ordinary faradic batteries this works automatically and gives from 40 to 100 interruptions in a second. After looking at all the different rheotomes constructed, I decided to have a handle attached to one of the ordinary form so that it could be worked by hand. A single interruption could thus be given, and any interval of time allowed between it and the next during an operation.

The next question was to decide upon the pressure that the secondary coil should work up to. Electricians have long considered that the secondary coil developed a much higher pressure (E. M. F.) against a high resistance like air than it did against a comparatively low resistance like the human body. In order, therefore, to make sure that the coil should develop sufficient pressure through the low resistance of the body, and achieve the result desired, I decided that it should be able to spark through six inches of air. This means a pressure of 160,000 volts through air, and would probably be more than required.

There was still another defect about all coils which if overlooked would have wrecked the whole of one's anticipations.

This defect is the very high resistance within the ordinary secondary coils. It is produced by the great length of fine wire in the numerous turns required to develop high pressures. The ordinary coil made to spark six inches would have about 25,000 turns of fine wire with a resistance of about 7000 ohms. If this resistance be compared with that of malignant tumours, there is found to be a very great difference. The latter are usually about 100 to 250 ohms. Now the energy of the current in the various portions of a closed circuit would be used up in proportion to the resistance encountered; consequently a tumour with a resistance of say 100 ohms, in circuit with a secondary coil having a resistance of 7000 ohms, would only obtain one seventieth part of the total

energy developed. The other sixty-nine seventieths would be used up in overcoming the high resistance of the numerous turns of fine wire in the secondary coil.

It became necessary, therefore, to have a special coil constructed, which you now see before you. This was made for me by Mr. Apps, who constructed the famous Spottiswoode coil and several others for special purposes.

My conditions were: first, that the coil should give a spark six inches in length through air; second, that the resistance of the coil be kept down as low as possible by using thicker wire than usual; third, that the operator should be able to increase or decrease the strength of the current with precision and rapidity whenever required; fourth, that the current breaker could be worked by hand if necessary as well as automatically.

All these conditions have been fulfilled by Mr. Apps in this instrument. [Demonstration of manual interruption, control of strength, &c.]

The resistance of the secondary coil instead of being 7000 ohms is only 1000; consequently when a discharge is sent from this through a tumour having a resistance of 100 ohms, one tenth of the energy in the circuit is developed in the tumour instead of one seventieth.

It must be clearly understood that the secondary coil of this machine acts as a transformer. The large volume of electricity poured out by the accumulators through the primary coil is converted into great pressure or electromotive force with a corresponding decrease in the quantity of electricity in the circuit. The result of this is that very little electrolysis and little or no caustic action takes place when the discharge is sent through a tumour. This fact I can demonstrate to you with Gaiffe's water voltmeter. I now connect this to a Stohrer battery of 40 cells and turn on the current for thirty seconds. You observe that 4 c.c. of oxygen and hydrogen gases have been formed by the divisions on the inner tube. Now compare this with the volume of gas that forms when the

voltmeter is connected up with the induction coil and the current is allowed to pass for the same period of time.

Instead of 4 c.c. being formed, only one fiftieth part of this quantity of gas can be observed.

For the same reason very little heat is developed with the secondary coil, although it can make a spark through six inches of air. [Demonstration.] For instance, I take a platinum wire 18 inches long and connect it to the six accumulators that supply the primary coil, and at once you see that it becomes red-hot. But when I connect it to the secondary coil it shows no change whatever. The same current from the accumulators which made the wire red-hot is raised to a very high pressure but so reduced in quantity that it has practically no heating effect or chemical action.

One more difficulty stood in the way—the measurement of the current. This is very simple with a constant current, and several reliable galvanometers are in use. An alternating current from a dynamo can also be accurately measured. With a faradic current the alternate discharges are unequal, it is therefore difficult to measure the quantity of current with any accuracy. This is of secondary importance, because the effects produced by a coil of this kind do not depend on the quantity of electricity, which is always very small, but upon the pressure, which is very high. What we require is to measure the E. M. F. or pressure. Here again there is a difficulty, and in the opinion of electrical experts the pressure developed varies according to the resistance offered. With low resistances it cannot be determined. Lord Kelvin, in answer to my inquiry, was kind enough to write to me that it was impossible to find out the voltage from any data of the dimensions of the coil and resistance in the circuit. The pressure is much greater through the high resistance of air than it is through the low resistance of tumour. According to De la Rue's tables it requires 23,400 volts to spark across one inch of air between a point and a disc. I have found by experiment that this

may be taken as a standard upon which to gauge the strength required for any given purpose. The coil is set to spark across a certain length of air. If it is then connected up with a piece of fresh beef it will produce certain results verified by examination which vary hardly at all. The coil can by this means be set with a fair amount of accuracy to produce anything from a mild injury up to entire disintegration.

My next step was to test the efficacy of this coil in a practical manner. So many difficulties and so much prejudice stand in the way of vivisection that I decided to use freshly-killed beef as the most suitable organic tissue upon which to demonstrate the disintegrating effect of high pressures. The structure of the voluntary muscles with its delicate striation is easily seen under the microscope, and this enables the observer to readily discern any change which takes place. Dead muscle according to Hermann (Erb, 'Electro-therapeutics,' p. 45) conducts twice as well as living muscle; consequently any change that takes place in dead muscle after the passage of the discharge would be still greater in the case of living muscle because the latter offers a higher resistance.

The pieces of beef used were obtained from the buttock in a solid mass six inches thick, so as to allow diffusion of the current. In each experiment the electricity was applied within twenty-four hours of the animal being killed. At every one of the experiments a small piece of the beef was cut off before the discharge was sent through and sections were made from them for comparison. Two platinum-pointed needles were used, introduced into the beef.

On the first occasion one third the full power of the battery was employed with the needles 4 inches apart. A small piece was cut midway between the needle points. Dr. E. J. Maclean had great difficulty in cutting the section from the beef through which the current had passed on account of friability of the tissue. On examination under the microscope I was delighted to find that

the muscular fibres were broken across in places and frayed out; whereas a piece of beef removed for examination, and of which a section was easily made before the current was passed, showed no such alteration.

The next experiment was to try the full force of the current that could be developed. A series of discharges were sent through a piece of beef 5 inches thick. When Dr. Maclean tried to cut some sections he found it impossible; the specimen simply crumbled away even when it was frozen.

However, after a great number of experiments and after wasting many pounds of beef, I at last found the right strength of current, and suceeeded with great difficulty in obtaining some sections that showed the breaking-up of the muscular fibres. For these I am indebted to Dr. T. W. Eden, who cut them for me at the College Laboratories.

I have had these photographed and now place them before you as Nos. 1 and 2. No. 1 shows the beef before any discharge was passed. No. 2 shows the loss of striation and partial breaking across of the fibres at one point after a discharge.

In this experiment the two needles were four inches apart, and the section was taken in the direct line of the current and midway between the needles, and therefore out of the area which would be affected if there were any heat or caustic action.

However, in order to demonstrate how little heat or caustic action is developed, I took a small piece of the beef as near as possible to the point of one of the needles, and it exhibited no charring or chemical action such as one finds when the voltaic current is used. In fact the change in tissue is almost exactly the same at the needle points as it is at a distance two inches off.

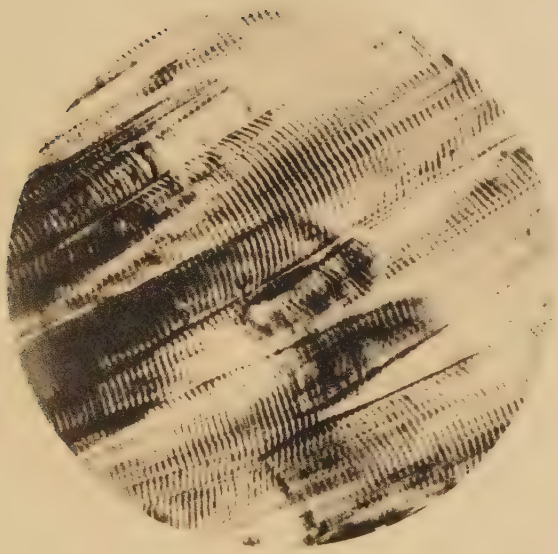
The next point was to determine as nearly as possible the area throughout which this breaking-up of the fibres took place. I made several experiments in this direction, and had a large number of sections made from small

DESCRIPTION OF PLATE I,

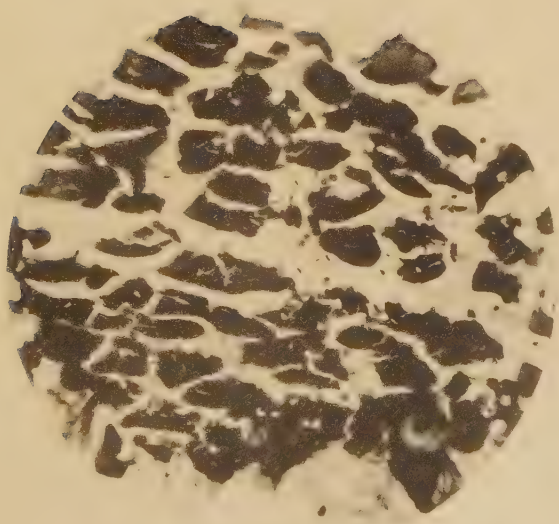
Illustrating Dr. Parsons' paper on the Disintegration of Organic Tissue by High Tension Currents.

No. 1.—From a piece of fresh beef before any current was passed.

No. 2.—This shows the breaking up of the fibres from a series of discharges. Section taken midway between the needles.



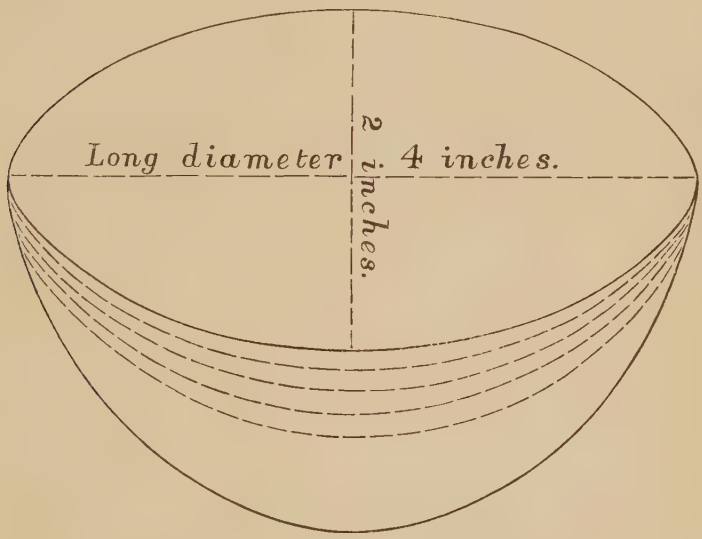
No. 1.



No. 2.

pieces of beef that were cut out at different places in the path of the current.

I used as large a mass of beef as I could obtain, so as to allow the current to diffuse well, and I found that the area affected took more or less the shape of an elliptic spindle, the diameter of the short axis being about one half that of the long axis.



I quite expected to find that the tissue in the direct line from one needle point to the other would be more broken up than that lying in the outer part of the spindle, but this was not the case. If anything, the breaking-up appears to be greater in the outer part of the spindle than in the centre. In the zone near to, but outside the spindle some injury was found to have taken place. This is shown on the diagram by a few lines; but sections taken outside that showed no change, although we know that if all the diffusion could be demonstrated it would be found to be globular as shown in the outer dotted line on the diagram.

The importance of arriving at this conclusion cannot be over-estimated, because if these powerful currents should come into practical use for malignant disease, it is imperative to know the area as nearly as possible that will be disintegrated.

I have found in using a voltaic current that some patients are very susceptible to electricity, and cannot stand a very powerful shock. Having found that thirty interruptions at a given pressure would produce disintegration with the needles 3 inches apart, I next tried the effect of reducing the pressure by one-half and doubling the number of interruptions to try if it would make up for the reduction in pressure. On comparison the results were found to be the same. This was most satisfactory if it would also apply to living cells, because with patients unable to stand strong currents, the defect could within certain limits be made up by using a greater number of discharges. It soon became apparent in carrying out these experiments that one must know how much tissue was included between the needle points when these were placed at different distances from each other. For instance, if the needles are 4 inches apart at one experiment and at another are 3 inches apart, it will be obvious that more tissue will be affected in one case than in the other, and that in order to make up for this the pressure must either be increased or more interruptions must be given. The question, then, is this—What is the proportion between the solid contents of an elliptic spindle 4 inches long compared with another 3 inches long?

The calculation is rather difficult, and one of my friends, a mathematician, kindly confirmed my results. The contents of a solid elliptic spindle four inches long contains more than double the tissue of another which is three inches long.

If we take the tissue included in an elliptic spindle two inches long as 1, then at three inches the contents will be 3·3 greater; at four inches 8 times greater; at five inches

15·6; and at six inches 27·0. We thus see that with the needles six inches apart the current has twenty-seven times more tissue to disintegrate than when they are two inches apart. In order to make up for this the pressure and the number of interruptions must be increased in a similar proportion.

When describing the drawbacks of a transformer, I pointed out that in the opinion of leading electricians a transformer does not develop against a low resistance like beef anything like the pressure which is developed against air. Now the resistance of the beef used was only 220 ohms. I therefore tried the effect of interposing an air gap 1¼ inches in the circuit. By this means a pressure of at least 30,000 volts must be developed to spark across the air gap. A similar experiment was tried with a vacuum tube in the circuit instead of an air gap. On examining sections of beef from the former, I found very little change. The enormous resistance of the air gap probably exhausted nearly all the energy of the current.

With the vacuum tube in the circuit, a greater change could be seen. There was some loss of striation and fraying of the muscular fibres. The resistance of a vacuum tube is very much less than air, consequently more energy in this instance was expended on the beef.

My next experiment was to try the effect of a Leyden jar as a condenser in conjunction with the transformer. The two poles from the transformer [Demonstration], as I now show you, are connected one with the outside, and one with the inside of the jar. The electricity first charges the jar, and is then discharged. You will also observe that a considerable change has taken place in the character of the discharge. The spark is much thicker, and shorter. In other words, the quantity is increased at the expense of the pressure. The spark will not extend much more than three quarters of an inch. The pressure, therefore, is approximately about 18,000 volts. There is also another change. The discharge takes place more

quickly than from the transformer. Some have estimated it at one 10,000th of a second.

At first sight it appeared as if electricity in this form would suit one's purpose better than any other, and that no tumour would ever be able to withstand its shattering effects. On trying it on a piece of beef it did utterly smash up the fibres. This is well shown in micro-photo No. 5, the section for which I am indebted to Dr. Ewen Maclean. But on further sections being taken from different parts of the beef, I found that the destroyed area was very small. There was hardly any diffusion in spite of the increase in quantity. A narrow lane from one needle point to the other covered the area of disintegration. This concludes my investigations as far as they have gone.

Allow me to thank you for the patience with which you have listened to me, and to hope that in your criticisms you will make some allowance for the difficulty of the subject with which I have grappled.

Dr. Lewis Jones said that he had made similar experiments on the disintegration of tissue by means of high tension discharges, using a transformer. He was astonished that Dr. Inglis Parsons should speak of the destruction of tissue as being produced by the "force of impact," such an expression being vague and meaningless. The destruction of the flesh was due simply to the heat produced by the discharge. Indeed, there was no other possible way in which the electrical energy could expend itself upon such a conductor as a piece of flesh. In his experiments the piece of meat quickly heated, and if the operation was continued it soon emitted steam and smoke, and finally flame. To say that there was no heat because a thick platinum wire was not heated by the coil discharge was most misleading. Of course, under the conditions of the experiment shown the platinum wire could not possibly have been heated appreciably. The destruction of tissue was much greater round the poles than in the interpolar area, and this point should have been mentioned more clearly by Dr. Parsons.

Dr. Horrocks considered that the facts brought forward were a distinct addition to our knowledge of electricity. At present one was unable to determine the practical utility of the paper, but if it could be shown that living cells, either normal

or pathogenic, could be broken up by means of an electrical current, then it was quite conceivable that this method had a future before it. As a matter of fact it had long been known that a simple fracture of a bone united aseptically. The effused blood and broken tissues were either absorbed or organised by natural processes. Similarly, if one could break up the tissue of say a tumour or an inflammatory mass by electrical currents, one might succeed in setting up changes which would result in the absorption of the tumour or the inflammatory exudation. He drew attention to the kind of current employed, namely, the faradic or induced. He could not quite understand how the author had arrived at the conclusion that none of the effects produced were the result of heat. Certainly the sparks shown to-night were very much like lightning flashes, and it was a well-known observation that in death from lightning there was evidence of the effect of heat, especially at the entrance and exit of the electrical force.

Dr. C. H. F. Routh said that Dr. Inglis Parsons in his able paper had shown how completely and without any actual counter-action the interrupted current could be made to destroy tissues or flesh, and do so much more effectually than the continuous current. Now he wished to know whether Dr. Inglis Parsons was acquainted with some discoveries made by Sir Benjamin Richardson ('Asclepiad,' 1886, pp. 378, 379). He proved that not only the interrupted current, but also simple non-electric vibrations, caused a change of tissue with this difference, that while the voltaic current *destroyed* the tissue and destroyed it effectually, vibratory shock changed and *reconstructed* the tissues, so as to produce networks of cells and canals, fissures of cells, sometimes empty cells and canals containing crystals like uric acid and cholesterine, and these tissues so produced (though he could not do so at will) could not be distinguished from those found in the living body. Had he ever tried the experiment of very powerful vibrations, not necessarily electrical, on tissue? Sir B. Richardson's experiments were performed on blood taken from his fingers, and the products after the shock examined under the microscope. We should not, however, forget that the action of the interrupted current might be influenced in some instances by a neighbouring vibratory Hezian wave, and thus modify the results.

Dr. Inglis Parsons, in reply, said that the disintegration depicted in the micro-photographs was not due to heat, but probably to a mechanical disruption produced by the very high pressures used. In fact, it was quite easy to rupture a piece of glass with these discharges although the temperature of the glass was but slightly raised; consequently there would not be much difficulty in rupturing the delicate structure of muscular fibre. Dr. Lewis Jones's results were no doubt produced by

heat because he had allowed the current to go on for three minutes. This was quite unnecessary. With a sufficiently high pressure one second was quite long enough; this would give about forty to sixty interruptions, and the amount of heat developed in that time was unappreciable.

APRIL 3RD, 1895.

F. H. CHAMPNEYS, M.A., M.D., President, in the Chair.

Present—52 Fellows and 6 visitors.

Books were presented by Professor von Winckel, Messrs. Wright and Co. (Bristol), Dr. John Phillips, and Professor Schultze.

Edwin Gilbert Emerson Arnold, L.R.C.P.Lond.; John Curtis Webb, B.A.Cantab.; and Charles Edward Sparks, M.A., B.C.Cantab., were admitted Fellows of the Society.

The following gentlemen were elected Fellows of the Society:—John Adolph Albrecht, L.R.C.P. and S.Edin. (Manchester); Francis Seward Beachcroft, L.R.C.P.Lond. (New Swindon); George Stanley Dodgson, B.A., M.B., B.C.Cantab; Henry Bannerman Morison, M.B.Durh.; George James Rutherford, L.R.C.P.Lond. (Hastings); Sidney Joseph Stuck, L.R.C.P.Lond.

The following gentlemen were proposed for election:—Henry Huxley, L.R.C.P.Lond.; and James Thomas Roger Miller (Malton).

AN INDISPUTABLE CASE OF COMPLETE TUBAL ABORTION.

By CHARLES J. CULLINGWORTH, M.D.

Dr. CULLINGWORTH exhibited a firm blood-clot containing in its interior a three-weeks' embryo. The clot

had been found clinging to the fimbriæ of a dilated Fallopian tube in a case of profuse intra-peritoneal hæmorrhage. The details of the case were as follows:

S. S—, aged 36, was admitted into St. Thomas's Hospital November 30th, 1894. She had been married fifteen years and ten months, and had had no children. On two occasions, early in her married life, she had passed a large clot after having gone a week beyond the usual time for her period, and was thought to have miscarried. But it was elicited that menstruation was habitually irregular, three to five weeks, and that, although on each occasion the clot was carefully examined, no substance or membrane was discovered. She had last menstruated on October 1st and 2nd. She had been subject to indigestion for two years, but had not been in the habit of vomiting. She had had no sickness at her periods. For the last three weeks she had vomited in the early morning. On the evening of Wednesday, November 28th, she was seized with sudden but not very severe pain in the abdomen, "like a stone round her waist." She ascribed it to flatulence, but it continued, and when it had lasted two hours she fainted. The pain, still limited to the upper part of the abdomen, lasted through the night, so that she obtained very little sleep. Between 1 and 2 a.m. she again fainted, and looked so ill that her husband gave her some brandy. She remembers nothing of the events of that night. Between eight and nine in the morning Dr. Collier of Wimbledon was sent for. The pain continued, and the patient vomited incessantly all the day. She complained of great thirst. There was no return of the fainting. Her condition next day not having improved, Dr. Collier sent her up to the hospital as a probable case of ruptured tubal gestation. There had been a slight discharge of blood from the vagina since the previous day.

On admission, at 3.20 p.m. on November 30th, the patient looked extremely ill. She was very pale; her pulse was rapid and feeble, and she was incessantly vomiting small

quantities of mucus. She had no pain. Her great complaint was of intense thirst. The abdomen was not much, if at all distended, and nothing abnormal was discovered on palpation. There was slight tenderness below the costal margin on the right side; none in the lower part of the abdomen. On vaginal examination the uterus was found to be apparently of normal size, displaced to the left of the middle line, and freely moveable. The vaginal roof on the right side was slightly depressed by a soft, ill-defined swelling, such as would be caused by a mass of soft blood-clot. No urine had been passed since the morning of the previous day. On introducing the catheter the bladder was found to be empty.

Dr. Sharkey and Mr. Pitts saw the case in consultation with Dr. Cullingworth. Dr. Sharkey was disposed to regard the symptoms as due to perforated gastric ulcer. Dr. Cullingworth inclined to the view that there had been an intra-peritoneal hæmorrhage connected with a tubal gestation. Mr. Pitts expressed no definite opinion. All agreed that she was not in a condition to bear operation, but that the abdomen should be opened if she rallied sufficiently. The rectum having been washed out, nutrient enemata, each containing ½ fl. oz. of brandy in a 3 fl. oz. enema, were ordered to be given every four hours. During the night the catheter was passed twice; on one occasion 1½ fl. oz., and on the other 3 fl. oz. of urine were withdrawn.

At 10 a.m. next day (December 1st) the patient had rallied a little. The vomiting continued, but the character of the pulse and the general appearance had decidedly improved. Dr. Cullingworth discovered evidence of the presence of free fluid in the abdominal cavity, and decided to open the abdomen.

An incision 2¾ inches long was made in the median line. A quantity of dark blood, chiefly fluid but partly clotted, was found free in the peritoneal cavity; 27½ fl. oz. were collected and measured,—some of course escaped. Behind the uterus, and at the fimbriated end of the

right Fallopian tube, to which it was lightly attached, was found an ovoid firm blood-clot. On grasping it, it came away loose in the hand. There were no adhesions. The broad ligament was quickly transfixed, an interlacing ligature passed, and the tube and ovary removed. The pelvis was cleared of clot. No douche was used. A sponge was placed in Douglas's pouch, and another beneath the line of incision, whilst the stitches were passed to close the abdominal wound. The sponges were then removed, and the stitches tied. During the operation, which lasted less than half an hour, the patient ceased to breathe and gasped as if dying, but revived on the administration of the anæsthetic being discontinued. After several ineffectual attempts, a pint and a half of saline solution were successfully infused into one of the veins of the upper arm. When the patient was put back to bed the pulse was distinctly perceptible, and the body warm. About 2 p.m. she began to pick at the bedclothes, and became flushed, restless, and delirious. Five minims of Liq. Strychninæ with $\frac{1}{6}$ gr. morphine were injected subcutaneously. After a time she fell asleep, but about 5.30 p.m. the breathing became difficult and noisy from ineffectual efforts to clear the air-passages of mucus. She died at 7.45 p.m., apparently from suffocation, the pulse remaining fairly good to the last.

Description of parts removed at the operation.—These consisted of (1) a firm clot, containing an embryo; (2) the right ovary; and (3) the outer part of the right Fallopian tube. The clot measured $2\frac{1}{2} \times 1\frac{3}{4} \times 1\frac{1}{2}$ inches, and was firm and homogeneous. On section a small whitish object was seen about $\frac{1}{2}$ inch from one extremity, surrounded by clot. This proved to be an embryo. The head is wanting. The procurved trunk measures in a straight line 8 mm., and presents undivided simple lower limbs and a sharply curved caudal extremity. The umbilical vesicle has been detached; above its remains there protrudes a well-developed heart.

The embryo corresponds in its development to one between the third and fourth week.

The ovary removed measured $1\frac{1}{2} \times \frac{1}{2}$ inch, and contained a corpus luteum $\frac{1}{2}$ inch in diameter.

The outer end of the Fallopian tube was sufficiently dilated to admit the finger. There was a little inflammatory lymph on its outer surface. The fimbriated end was expanded, but otherwise normal.

Description of parts removed at the autopsy.—The uterus and remaining adnexa were removed *en masse.* The left tube and ovary were normal. The right tube presented a normal appearance for a distance of $2\frac{1}{2}$ inches from the uterine end, *i. e.* up to the ligature. The portion on the distal side of the ligature is dilated, the lumen measuring $\frac{1}{3}$ inch. The uterus was only slightly enlarged, the length of the cavity scarcely exceeding the normal. The interior of the cavity presented an irregular and shaggy appearance, due to the presence of the membrana decidua. This was everywhere adherent to the uterine wall, and its lower limit was sharply defined at the level of the os internum.

There was no evidence of a decidual membrane in the Fallopian tube.

DIFFUSE (NON-CAPSULATED) MYOMA OF UTERUS.

By Charles J. Cullingworth, M.D.

Dr. Cullingworth showed a myomatous uterus removed on the 14th of March, 1895, from a patient in St. Thomas's Hospital. The points of interest in the case were, (1) that the main portion of the tumour was not encapsuled or even definitely circumscribed, but had

apparently infiltrated the muscular wall more after the manner of a malignant than a non-malignant growth; and (2) that, notwithstanding the patient's age, the menopause had not occurred, and the symptoms, so far from having become less urgent, had recently increased in severity to such an extent as to threaten the patient's life.

The patient, E. H—, was a married woman aged 55. Menstruation had commenced at fourteen, and had always been painful and profuse. She had been married twenty-nine years, and had had one miscarriage at the third month and three children at term. The last child was born in 1879, and the womb is said not to have subsequently resumed its normal size. About seven years ago she first consulted a doctor on account of a distinct swelling in the hypogastrium with increasing menorrhagia and dysmenorrhœa. From that time the loss and pain had been so great that she had been constantly obliged to remain in bed during the whole nine days that the flow lasted. Four years ago, the patient, being then fifty-one, consulted Dr. Cullingworth about the tumour, and he advised her to wait for the menopause, which in the nature of things did not seem likely to be long deferred. The symptoms, however, continued to increase, and in January, 1894, there having been up to that time no indication of the approach of the menopause (beyond the missing of a single period),* she was admitted into the hospital.

The anterior wall of the uterus was thickened and enlarged by a firm tumour, which, on dilating the uterus, was felt to project into the cavity as a smooth, hard, rounded swelling. The sound passed a distance of 4½ inches to ·5 inches. The interior of the uterus was curetted, and some soft villous growths removed. The patient left the hospital fairly well, but three weeks later, whilst away from home, she had a very severe

* It is interesting that, of the only two of the patient's six sisters who have hitherto reached the age of fifty, one continued to menstruate until fifty-three and the other until fifty-eight.

hæmorrhage which lasted through the whole of August. A further hæmorrhage took place in October, and a still more severe one in January of the present year. This last was accompanied with the passing of large clots, and was the most profuse hæmorrhage the patient has had. A condition of profound anæmia resulted. On one occasion she was discovered by her husband in a state of syncope, from which it seemed for some time doubtful whether she would revive. The loss ceased on the 1st of February, and on the 11th, *i. e.* as soon as her condition made it safe for her to be removed, she was readmitted into the hospital.

After a month's rest in bed, her health having considerably improved, the operation of abdominal hysterectomy was successfully performed.

The parts removed consisted of the uterus and appendages. The Fallopian tubes were normal. Both ovaries were small and atrophied; the right one contained a small blood-cyst.

The uterus measured 3 inches in vertical, $3\frac{1}{4}$ inches in antero-posterior, and $4\frac{1}{2}$ inches in transverse diameter, and $11\frac{1}{2}$ inches in circumference. The outer surface of the tumour was smooth and regular, except at the lower and posterior part, where there projected a rounded fibroid, easily separable from the main mass of the tumour owing to the presence of a capsule of loose cellular tissue. On the right side of the tumour was another small hard fibroid, which could be readily enucleated from the rest of the tumour. The main mass of the tumour consisted, however, of a fibro-myomatous growth infiltrating the whole uterus and extending from the mucous membrane to the peritoneal coat. There was no evidence of any normal uterine tissue, such as usually surrounds this form of tumour, and it was found impossible to enucleate the mass from its peritoneal covering.

The uterine canal was situated in the posterior part of the tumour, was greatly expanded, and measured 2 inches in length. Its mucous membrane was quite smooth,

and to the unaided eye presented a perfectly healthy appearance.

On section, the tumour was very firm and resistant, had a greyish-white colour, and presented an irregular network of interlacing fibres. The two small fibroids which were enucleable from the rest of the mass showed a more concentric arrangement of fibres, and were whiter in colour.

Microscopically, the tumour consisted chiefly of a mass of spindle-shaped muscular fibres interlacing in an irregular manner, with a comparatively small amount of fibrous tissue and some connective-tissue cells. Scattered through the tumour were several large circular or oval spaces, which were venous sinuses cut across. In one or two parts of the sections, early myxomatous change was seen to have occurred.

Dr. Peter Horrocks pointed out that although only twenty-eight ounces of blood had been measured, this did not represent the amount lost, because a good deal would escape, and some would be still in the peritoneum. Therefore he asked how much saline fluid had been injected, and also what was the precise mode of death. Dyspnœa was given as the cause of death. Had a post-mortem examination been made, and if so did this reveal any cause for the dyspnœa? He asked these questions because he had elsewhere shown that these cases died from secondary syncope, the heart failing through loss of blood-pressure, and the method of avoiding this was by injecting saline fluid into the veins in a quantity which should as far as possible equal the amount of blood lost.

Mr. Alban Doran spoke of Dr. Clarence Webster's recent researches, which showed that the first condition for the establishment of a tubal gestation was the development of decidual cells not only under the endometrium, but also under the tubal mucosa. The ovum, therefore, found a nidus before reaching the uterus. The inflammatory changes around the fœtal sac were the result, not the cause, of the abnormal pregnancy. Mr. Doran, when a woman was brought to him sinking from intra-peritoneal hæmorrhage, would open the abdomen and stop the bleeding. He would not rely on any method of diagnosis between rupture of the tubal sac and tubal abortion, nor on any theory that after tubal abortion the sac ceased to bleed.

Dr. Leith Napier said that the interest which had been

shown by the Fellows regarding the first specimen had to some extent allowed the second specimen to pass unnoticed. He agreed thoroughly with Dr. Cullingworth in thinking this fibromatous condition of the uterus, occurring in connection with undoubted symptoms of increasing growth and hæmorrhage in a woman aged fifty-five, of much importance. The case was important both clinically and pathologically; clinically, inasmuch as it afforded another example of the fact now recognised by all well-informed gynæcologists, that a fibroid uterus delayed the establishment of the menopause, and that these conditions were usually associated with fibroids of the soft variety, or occurred in connection with hard fibroids which had become invaded by cystic disease. But this specimen illustrated a general fibromatous change of the whole organ; it was notable, however, that there also existed two small fibroid tumours. In a recent paper by Marchesi, in which cases were cited from the clinic of Chiarleoni, reference was made to the condition of the endometrium in cases of interstitial fibroids or with the fibrous degeneration of all the uterine parenchyma; Marchesi states that in subserous fibromata the changes in the mucosa are identical, but that in one case a totally fibromatous condition of the uterus was found. This whole paper was worthy of attention, and would be found in the 'Annali di Ostetrica e Ginecologia' for December, 1894. From recent investigations which the speaker had been making, it seemed to him that the condition of the utricular glands deserved fuller consideration with regard to their possible relationship to certain uterine tumours and other allied conditions than this subject had yet received. He hoped Dr. Cullingworth would give the Society his opinion as to the state of the endometrium in the case now shown.

DEGENERATING UTERINE MYOMA.

Shown by William Duncan, M.D.

The patient, aged 32, had one child ten years ago; catamenia began at thirteen, and were normal and regular up to admission.

A fortnight before admission, after a hard day's work,

she had retention of urine, and a catheter had to be used by her medical man, who found she had a tumour in the pelvis and sent her up for operation. On admission a smooth elastic tumour was felt reaching to within a finger's breadth of the umbilicus; there was a loud uterine souffle over its left side. *Per vaginam* the tumour could be felt springing from the cervix and filling the upper part of the pelvic cavity.

On February 1st, 1895, the cervix was dilated, and the uterine cavity on digital examination found to be healthy, but pushed forward by a tumour situated in the posterior uterine wall. For seventeen days the temperature continued normal, and then intermitting pyrexia set in; the patient felt pains in the body, and looked ill. She was thought to be suffering from influenza.

From February 24th to March 1st there was no action of the bowels, and the patient had a red dry tongue; the pulse was small, rapid, and very compressible. Thinking some change was taking place in the tumour, abdominal hysterectomy was performed on March 1st. Before the completion of the operation (which lasted one hour) the patient was so bad that brandy enemata and hypodermic injection of ʒj of ether were administered.

From March 1st to 4th strychnine injections were given, and from that date the patient steadily improved. On March 7th the temperature was normal, and the clamp came away on the 23rd.

ŒDEMATOUS MYOMA OF UTERUS.

Shown by William Duncan, M.D.

The tumour weighed seven pounds, and was removed by abdominal hysterectomy from a single woman aged twenty-six, who gave the following history. The periods

commenced at the age of fourteen, were regular and slight in amount until 1893, since when they have lasted seven to fourteen days, with a good many clots. In 1891 she was seized with violent pains in the abdomen, for which she was kept in bed six weeks; since then the left leg has been larger than the right. In 1893 the swelling of the abdomen was first noticed, and has gradually increased.

On admission the abdomen was found distended by a large, smooth, elastic tumour reaching nearly up to the ensiform cartilage. *Per vaginam* the uterus could be felt high up, small and moving with the tumour.

Fluctuation was thought to be present by some who examined the tumour.

The operation was uncomplicated, and the patient is now (twenty-fifth day) convalescent.

DOUBLE TUBO-OVARIAN CYSTOMA.

Shown by William Duncan, M.D.

The tumours were removed from a nulliparous woman aged forty-nine, who for the last two years has had constant bearing-down pelvic pain and for eighteen months had been obliged to give up work. She had never suffered anything until two years ago.

On examination there was marked stenosis of the os uteri. A fine probe could be passed upwards and backwards three inches. An irregular swelling could be felt on either side of Douglas's pouch.

Abdominal section (March 15th).—The mass in Douglas's pouch was found to be everywhere adherent to the uterus, omentum, and intestines, and with much difficulty removed. Both ovaries and tubes were dilated into cysts, freely communicating and as large as oranges, with very thin walls. The patient made an uninterrupted recovery.

DILATED TUBES AND CYSTIC OVARIES (EARLY STAGE OF TUBO-OVARIAN CYSTS).

Shown by William Duncan, M.D.

The parts shown were removed by abdominal section from a single girl aged nineteen, who was quite well until four years previously, when she had typhoid fever. Since then she has twice (in 1892 and 1894) been in the Reading Hospital for retroflexion and pelvic peritonitis; the uterus was replaced by a sound and a Hodge pessary introduced. Getting no better, and as she still suffered constant pelvic pain, increased at the periods, she came to London.

On examination the uterus was retroflexed and fixed in the pelvis by adhesions; ill-defined swellings could be felt at either side of the uterus.

Operation (March 25th, 1895).—All the pelvic organs were firmly matted together by dense adhesions; the fundus uteri was matted to the sacrum by a mass of inflammatory exudation extending backwards from the fundus; the adhesions were broken down and the ovaries and tubes freed and removed. The patient recovered without a bad symptom.

On examining the parts removed, the tubes were dilated to the size of one's finger, the ovaries were as large as walnuts, and cystic; the tubes and ovaries, though not in direct communication, were only separated by a septum one sixteenth of an inch in thickness, and Dr. Duncan pointed out that very shortly these septa would have broken away and left tubo-ovarian cysts as in the previous specimen shown. He thought there could be no doubt but that some tubo-ovarian cysts had their starting-point in pelvic peritonitis which matted the organs together; then the tubes dilated, the ovaries became cystic, and finally the tubes and ovaries communicated with one another.

Mr. Alban Doran stated that in 1887 he had demonstrated how tubo-ovarian cysts developed from cystic degeneration of tubes and ovaries adherent through chronic inflammation ('Trans. Path. Soc.,' vols. xxxviii, xxxix). The specimens (R. C. S. Pathol. Series, 4475, 4478, 4488e, 4573, 4574a, 4567, 4584b and e) showed the transitional stages from unadherent ovary and tube to complete fusion of the two after their conversion into cysts. Three years later Schramm and Neelsen demonstrated the same pathological changes in the 'Archiv f. Gynäkologie' (vol. xxxix). Mr. Doran believed that this variety of tubo-ovarian cyst, the result of inflammation, was commoner than the teratological form described by Mr. Bland Sutton. These inflammatory tubo-ovarian cysts always represented very chronic disease; in several cases where Mr. Doran had operated, symptoms of pelvic inflammation had been present for six or seven years.

TUBAL GESTATION OF THREE MONTHS OPERATED ON BEFORE RUPTURE.

By A. H. N. Lewers, M.D.

Dr. Lewers showed a specimen of tubal gestation of about three months' development, which he had operated on *before* rupture. The sac, being very thin, burst on pulling up the Fallopian tube in order to tie the broad ligament. A special point of interest in the specimen was that about an inch nearer the uterus there was a second dilatation of the Fallopian tube about the diameter of a halfpenny; this on section in the recent state contained firm red clot. Dr. Lewers had not yet examined this for chorionic villi, in order to avoid spoiling the specimen; but he thought it not improbable that this second dilatation contained a tubal mole. If so, there would have been a twin extra-uterine pregnancy in the same Fallopian tube.

The clinical details of the case are published in the 'Lancet,' April 6th, 1895.

ADJOURNED DISCUSSION ON SOME OBSERVATIONS ON THE TEMPERATURE, PULSE, AND RESPIRATION DURING LABOUR AND THE LYING-IN.

Dr. Dakin congratulated the authors on their very important paper. Their observations on the temperature, which were made under conditions most favourable for accuracy, showed what was the typical chart of a lying-in woman; namely, one differing in no way, except for some slight exaggeration of the evening rise and morning fall, from that of a person in ordinary health. The chart of the cases where perinæal tears were present showed the advantages and the efficacy of the antiseptic methods in use at the General Lying-in Hospital at the present time, for it did not differ practically from that of cases where there were no tears. The pulse-rate which they found to be the average was perhaps more interesting, as it was opposed in some degree to what was stated in the text-books. The authors' results were, however, what most of those who had large experience of lying-in women would expect. As regarded the tension, the authors were again at variance with what had been hitherto accepted. Fritsch and Meyburg found that the pulse-tension was diminished; and it became difficult to reconcile this with the slower rate. The results of the present authors showed that the pulse in these circumstances obeyed the ordinary laws of the circulation, and thus explained the tendency to a slow pulse, which could not be denied, by the high tension always present. Their results explained also the increased frequency of pulse which often preceded post-partum hæmorrhage, if it were assumed, as it fairly might be, that the suddenly increased arterial tension which normally appeared was due to a retraction of the vessels, and perhaps the heart, in unison with the retraction of the uterus; then if for some reason retraction of neither uterus nor arteries were complete, there would be, as happened in the cases recorded in the paper, a low-tension, and for that reason a rapid pulse on the one hand, and a relaxed and bleeding uterus on the other. It was possible that the increased rapidity of pulse observed by the authors after the administration of chloroform was due to diminished tension, and the tendency to post-partum hæmorrhage believed by some

to exist in women who have had chloroform during their labour might be thus explained. Dr. Dakin had, however, never seen this effect from the drug. There was one effect of its administration during a fairly long time, and that was on the child at birth. The child was often lethargic, and did not begin to cry at once without considerable stimulation.

Dr. Remfry referred to the rise in the pulse rate after chloroform mentioned in the paper. He had not observed this in normal cases, and asked whether it was not a fact that in the cases recorded chloroform had only been given in tedious labours and when instrumental or other manipulations had been found necessary. He considered that any manipulation tended to quicken the pulse, and that, therefore, in the records submitted by the authors there might be a source of fallacy.

Dr. Peter Horrocks thought the increased rate of the pulse in post-partum as in any other form of hæmorrhage was physiological. Theoretically half the amount of blood in the body could do the same work in a given time if it were circulated with double the velocity. The increase in the number of heart beats was an attempt to increase this velocity *pari passu* with the loss. The precise way in which the loss of blood set up this increased rate was not perhaps known, but no doubt it was through the vaso-motor system. He could not agree with Dr. Dakin regarding retraction of the heart and arteries. As a matter of fact so long as the heart was completely refilled with blood there was no retraction. If it were underfilled there would be some retraction, and if it were not refilled at all there would be complete retraction during each diastole. The increased size of the left ventricle during pregnancy was a hypertrophy, and its subsequent diminution was an involution.

Dr. Amand Routh asked for more information as to the effect of chloroform upon the temperature of the lying-in woman. Dr. Frederick Hewitt and others had observed that in operations of average length the body temperature was lowered about 1° centigrade when chloroform was used, and Dr. Routh thought it likely that this would be still more marked after the prolonged, though partial, administration of chloroform during labour. This lowering of the body-heat might, in a measure, account for the difficulty of reviving children after the use of chloroform, which, as Dr. Dakin had stated, was not infrequently observed.

Dr. Duncan agreed with the authors in questioning the accuracy of the statement made in text-books that the pulse-rate became slow after delivery. In years gone by he (Dr. Duncan) used to dread post-partum hæmorrhage if the pulse kept up to 110, but he found his fears were groundless, as he had never had a case of post-partum hæmorrhage, whilst

a good many of his patients had a pulse of over 100 for some hours after delivery. He thought a high pulse-rate was met with most often in the upper classes of society, where a neurotic temperament was not rare.

The PRESIDENT said that a paper of this kind was much needed to test and correct accepted views, which were apt to be quoted from book to book without sifting. The chief point in debate seemed to be the pulse. In his experience this was often rapid, especially after excitement, either mental or bodily, without any undue loss of blood; but in this case the beats were distinct and the tension good. The pulse of hæmorrhage was running, the beats not well separated, and the tension low. Such a pulse often preceded hæmorrhage, and betokened a general vaso-motor condition affecting heart, arteries, and uterus.

Dr. PROBYN-WILLIAMS, replying for Mr. Lennard Cutler and himself, thanked the Society for the way in which their paper had been received. In connection with Dr. Remfry's remarks he stated that when considering the effect of the administration of chloroform on the pulse, the writers had included those cases in which the anæsthetic had been employed during natural labour, or for the application of forceps; but not those in which craniotomy, &c., had been necessary. He agreed with Dr. Amand Routh that its administration for a considerable time lowered the temperature, and this had been noted in the paper. He differed from Dr. Horrocks; and was glad to find that the President considered that a low tension of the pulse precedes as well as follows post-partum hæmorrhage. This was well shown in the sphygmographic tracings of Case 7. They had frequently noted the fact pointed out by Dr. Duncan that the rapidity of the pulse was considerably affected by a nervous temperament in the patient.

LIST OF OVARIOTOMIES IN WOMEN OVER EIGHTY. A CASE AGED EIGHTY-THREE COMPLICATED BY EPITHELIOMA OF THE VULVA.

By Leonard Remfry, M.A., M.D., B.C.,
ASSISTANT OBSTETRIC PHYSICIAN, ST. GEORGE'S HOSPITAL; OBSTETRIC PHYSICIAN, GREAT NORTHERN HOSPITAL.

(Received February 4th, 1895.)

A widow aged 83 came to St. George's Hospital in August, 1894, complaining of pain in passing water, and of irritation of the genitals for twelve months. She had had four children, the last being forty years old. The menopause followed the confinement. General health always good.

Examination per abdomen.—Palpation was difficult, but in the middle line rising to three inches above the umbilicus was a smooth fluctuating tumour which *bimanually* gave the signs of a moveable ovarian of the right side with the uterus behind and below it. The bladder sound passed four to five inches; the vesical walls elastic. On the left labium majus there were two or three round patches looking like granulating sores, with in places a punched-out appearance. They were distinctly hard. The diagnosis was epithelioma, and this the microscope subsequently confirmed. No lymphatic enlargement could be detected.

After consultation, it was decided to remove the epithelioma and for the time leave the ovarian tumour alone. The growth on the vulva was freely removed by scissors, the hæmorrhage being easily stopped by pressure. Ten days after the patient had some cystitis, which, however,

soon disappeared after washings out with boroglyceride and water, ʒj ad Oj. On September 10th the patient went out with the wound healed and without any bad symptom. In two months' time she returned, stating that she had pain in the "stomach," and that she thought she was "bigger."

On examination, November 7th, the cyst was undoubtedly larger, and occupied not only the centre of the abdomen but also the right flank. The left labium was quite healed. There were no enlarged glands nor any induration.

Another consultation was held, and the question of the advisability of removing the tumour considering the age of the patient and the comparatively trifling inconvenience caused by the presence of the tumour was discussed.

Ovariotomy was performed, the anæsthetic being ether. The operation was simple and short. The cyst was tapped and removed in the usual way. There were no adhesions. On the second day the temperature rose to 100°, but for the rest of the time was normal or subnormal. The patient had slight cough, but this she had before the operation. She was made to lie on her side a good deal, owing to the possibility of bronchitis supervening.

During convalescence there was considerable difficulty in keeping the bowels open, but when the patient left the hospital three weeks after the operation she appeared to be quite well. Some days before this she had wandered in her mind, and had been very irritable and difficult to manage.

A table of ten cases of ovariotomy in women above the age of eighty is appended. It will be noticed on referring to this :—(1) That all the ten patients recovered. (In the last case mentioned, *i. e.* that of Pippingsköld, the woman died of "gastritis and anorexia" fifty days after the operation, but it is to be presumed, since the record says that she recovered, that the death was in no way due to the ovariotomy.) (2) That convalescence was easy; in one case only being disturbed by cystitis, which was cured

without difficulty. (3) That nine of the tumours were multilocular ovarian (the report of Schroeder's case cannot be found in detail). (4) That absence of adhesions was the general rule.

The results of the cases brought forward, even though the number is few, show the success attending ovariotomies in very old women. Aged people as a class appear to bear operations well when the general health is fairly good, and there are no serious complications present, the most important one being kidney disease.

List of Ovariotomies in Patients over the age of 80.

No.	Operator.	Age of patient.	Nature of tumour, &c.	Result.	Remarks.	Where recorded.
1	Knowsley Thornton	94	Small multilocular of right ovary; thin vascular walls	Recovery	Irritable and difficult to manage during recovery	Not yet published. Letter from Mr. Thornton.
2	Owens (Brisbane)	87	Ovarian multilocular; no adhesions	Recovery	Cystitis for short time after operation. Patient had parovarian on same side removed 8 years before	Australian Med. Gaz., 1894.
3	J. Paul Bush (Bristol)	84	Large multilocular ovarian; no adhesions	Recovery	—	Brit. Med. Journ., 1894.
4	Remfry	83	Right multilocular ovarian; no adhesions	Recovery	Patient irritable, with some wandering of mind during convalescence	Obstet. Soc. Trans., 1895.
5	Herbert Spencer	82	Tumour size and shape of cottage loaf; twisted pedicle	Recovery	No vomiting or collapse; some wandering of mind	Brit. Med. Journ., 1893.
6	John Homans	82	Ovarian; cyst wall friable and brown; multilocular; weight 15 lbs.	Recovery	—	Boston Med. and Surg. Journ., 1888.
7	Edis	81	Multilocular cyst extending to umbilicus	Recovery	Clear jelly-like fluid in cavity of abdomen	Brit. Gynæcolog. Journ., 1892.
8	Heywood Smith	81	Tumour adherent to abdominal wall; portion of cyst wall left; weight 47 lbs.	Recovery	Slight diarrhœa during convalescence	Lancet, June 30, 1894.
9	Carl Schroeder	80	—	Recovery	No details of case found	Krankheiten d. Weibl. Geschl.
10	Pippingsköld	80	Multilocular cyst; no adhesions	Recovery	Patient died 50 days after operation of gastritis and anorexia	Finska Läkan Handlingen, 1884, Helsingfors.

Mr. Butler-Smythe congratulated Dr. Remfry on the success of his case, and asked if any mental symptoms had been observed previous to the operation. The patient had been under his care on two occasions, but had absolutely declined to have the tumour removed. Her mind then seemed to be extremely weak, and her conduct and language extraordinary. She had been to several hospitals "to show herself to the doctors," but would not submit to any operative measures beyond aspiration of the cyst, which was twice performed. It was most gratifying to hear from Dr. Remfry that up to the present time there had been no recurrence of the epithelial growth.

Dr. Lewers said he observed there had been an epithelioma of the vulva complicating the ovarian tumour in Dr. Remfry's case. He hoped that the after-history of the case as regards this part of it would be given to the Society. He had seen and operated on a good many cases of epithelioma of the vulva, and his experience was that recurrence was much more likely to occur early than in cases of malignant disease of the cervix. Dr. Lewers mentioned a case under his care at the London Hospital where there was a malignant growth about the size of a two-shilling piece on one of the labia; it appeared to be quite free from the surrounding tissues. He held it well up, and removed it with the cautery, cutting wide of the growth. The wound healed well, and no recurrence took place in the scar, but about five months later he found the case had been admitted under one of his surgical colleagues with a large malignant ulcer in the groin.

Dr. Heywood Smith said that as he was one of the operators referred to in Dr. Remfry's list, he rose to state that in his case there was ample justification for the operation even on so old a woman, as the tumour was of enormous size (47 lbs.) and quite prevented the patient moving freely about. In one respect the case differed from the majority of those quoted inasmuch as the adhesions to the abdominal wall were very extensive and strong, so that Dr. Smith deemed it wiser to leave a large portion of the cyst wall unstripped off the abdominal wall. The piece so left was about the size of an ordinary dinner-plate.

The President said that it must be remembered that old people of eighty years and above were selected cases; they had outstayed their contemporaries, and might be expected to be unusually sound. Dr. Remfry's paper illustrated the fact that cases which would not seem favourable often turned out well, and that a selection of ovarian cases on *à priori* grounds was unsatisfactory. The good results of cases of ovarian tumour with pregnancy illustrated the same fact.

Dr. Remfry, in reply to Mr. Butler-Smythe, stated that the mental condition of the patient was perfectly satisfactory during

her stay in the hospital, except during convalescence, when she "wandered" and was irritable and difficult to manage for three or four days. In saying that a stone had been removed from her bladder, she had probably mistaken the excision of the epithelioma for the other operation. As to Dr. Lewers's question, Dr. Remfry said there had been no recurrence of the epithelioma. It was excised in August, 1894. He quite agreed with the President that women of eighty or above had already given sufficient evidence of their strength of constitution by the very fact of their having reached such an age, and therefore their resisting power in operations was great. It was always necessary to verify a patient's age by obtaining if possible the birth certificate, for old people were often doubtful and inaccurate. He considered that in old women particular care should he taken to prevent shock after ovariotomy by the administration of nutrient and stimulating enemata.

MAY 1st, 1895.

F. H. Champneys, M.A., M.D., President, in the Chair.

Present—36 Fellows and 1 visitor.

Books were presented by the Governors of the New York Hospital, the Boston, U.S.A., Lying-in Hospital Staff, Sir Henry W. Acland, and Dr. Constantine Holman.

John Davoren, L.R.C.P.I., C.M.; and Henry Bannerman Morison, M.B.Durh., were admitted Fellows of the Society.

John Adolph Albrecht, L.R.C.P. & S.Ed. (Manchester); Francis Seward Beachcroft, L.R.C.P.Lond. (New Swindon); and George James Rutherford, L.R.C.P.Lond. (Hastings), were declared admitted.

The following gentlemen were elected Fellows of the Society:—Henry Huxley, L.R.C.P.Lond.; and James Thomas Roger Miller (Malton).

William Edwin Falkingbridge Tinley, M.B., B.S.Durh. (Whitby), was proposed for election.

ANENCEPHALIC DI-PROSOPIA FŒTUS.

Shown by Amand Routh, M.D.

(A sub-committee, consisting of Drs. A. Routh, Giles, Roberts, and Dakin, was appointed to examine and report on this specimen.)

ON THE COMMON FORM OF "WHITE LEG" AFTER CONFINEMENT.

By C. Hubert Roberts, F.R.C.S., M.B.Lond., M.R.C.P.,

TUTOR OF PRACTICAL MIDWIFERY, ST. BARTHOLOMEW'S HOSPITAL; PHYSICIAN TO OUT-PATIENTS, SAMARITAN HOSPITAL, LONDON.

(Received April 20th, 1895.)

(*Abstract.*)

The author gives details of sixteen cases of so-called White Leg, most commonly met with after confinement.

He gives a short history of the literature of the subject up to the present date.

He points out the differences observed in the cases quoted from those described in most text-books of the present day.

He attempts to show briefly that the white leg described in such books is not the common variety met with after delivery.

He describes shortly the form he believes to be the common one, and describes its symptoms, duration, complications, and treatment.

He believes that the term White Leg includes several different forms of disease which differ in many particulars.

He proposes the following classification of white leg (so called):

1. Cases which are due to pressure.
2. Cases associated with general disease.
3. Cases of a true septic nature.
4. Cases of thrombosis apart from sepsis.
5. Cases of thrombosis and sepsis combined.

The author refers in detail to his own (sixteen) cases which followed confinement, and comes to the following conclusions:

(*a*) That the form which he calls thrombotic is the common

variety after delivery, and not the brawny white leg, which is rare.

(*b*) In such thrombotic legs there are not necessarily signs pointing to sepsis, and that such thrombosis is rather a blood-change associated with or due to severe loss of blood at the time of delivery.

(*c*) The thrombosis in most cases starts primarily in the uterine and pelvic veins.

(*d*) That such thrombotic legs are not brawny and white, but dusky in colour and œdematous, invariably painful, with definite "tender spots," and that the femoral or saphenous veins are constantly felt thrombosed.

(*e*) Both legs may be affected, but always one after the other.

(*f*) The onset of the disease is about the tenth to twentieth day.

(*g*) Pyrexia is the rule for a variable period, but does not necessarily indicate sepsis.

(*h*) Such cases run a definite course of about six to eight weeks.

(*i*) Complications are uncommon, but pulmonary embolism is the greatest danger.

(*j*) The prognosis to life is good.

(*k*) The prognosis to the leg itself is not good; the majority perhaps get well, but many remain permanently damaged.

(*l*) Some details of treatment are given.

Mr. President and Gentlemen,—In introducing for your discussion to-night the subject of white leg, I know I am introducing a very old one, and one on which much has already been written, for its literature is enormous, and I fear I have little to add. Possibly this disease has been recognised since the days of Hippocrates; De Castro mentions it, while Mauricean gives a good account of its symptoms, saying that "it was caused by the reflux on the parts of certain humours which ought to have been evacuated by the lochia."

Puzos ascribed it to the arrest of the secretion of milk, and this theory, I believe, was adopted by Levret;

hence the term "milk leg." White of Manchester, in 1784, attributed it to the lymphatics. Doris in 1817, Bouillard in 1823, Robert Lee in 1829, and Bouchat in 1844, wrote on and recognised the condition, and pointed out the obliteration of the veins. Lee especially drew attention to the presence of thrombi in the pelvic and uterine veins as well as the femoral, and pointed out its occurrence in other conditions, such as cancer.

Dr. Mackenzie, later, pointed out that ligature of the femoral vein was not sufficient to account for the thrombosis, and proposed the septic element in producing such a condition.

Tyler Smith in his 'Manual of Obstetrics' pointed out the occasional analogy between cases of puerperal fever and phlegmasia dolens, and said that infection was the chief factor in the disease.

Tilbury Fox, in two papers read before this Society in 1860 ('Obstet. Soc. Trans.,' vol. ii) wrote extensively on this subject, maintaining that something more was required to produce the phenomena of the disease than simple phlebitis, and proposed the question of lymphatic obstruction.

In the present day I can but refer you to the many valuable text-books which are so much read in our medical schools.

The Continental and American literature is enormous, and I venture to append a short bibliography at the end of this paper for reference.

In the face of such an enormous collection of literature I am afraid I have little to add, but it is a matter possibly of interest to some of the members of this Society; and I have ventured to bring forward a few cases which I have observed and collected mostly from St. Bartholomew's Hospital, and I must thank Dr. Champneys and Dr. Griffith for allowing me to quote these cases, and to make use of the ward notes and those of the Extern Midwifery Department.

It is perhaps very difficult in using the term "white leg" to say exactly what we mean, and I fancy much of the confusion arises from authors attempting to describe it as one disease in connection with pregnancy. I am sure the term "phlegmasia alba dolens" is somewhat misleading, for only a very few legs swollen after confinement are of this type, and the cases seem to be getting fewer and fewer; they do exist, and their pathology is practically unknown, and I am not, I fear, in a position to discuss this form of leg at present.

The object of this paper is rather to describe the commoner forms of swollen leg we meet with after confinement, and which, as far as I have observed in the cases quoted, seem to differ a good deal from those described in text-books.

Again, under such a term as white leg we are not talking of a single condition, but since there may be various forms of this disease, and it is not confined to women but affects men also, and is not necessarily confined to the pregnant condition, I propose the following classification.

(*a*) Cases depending upon pressure on some part of the venous system.

(*b*) Cases occurring in connection with certain general diseases—phthisis, cancer, cholera, the fevers in general, typhoid, typhus, &c.

(*c*) Cases occurring with general septic conditions—dysentery, pyæmia, poisons such as snake-bite, intestinal and rectal ulceration, bone disease, portal pyæmia, and the so-called puerperal fevers.

(*d*) Those associated with thrombosis apart from sepsis but due to loss of blood.

(*e*) Those of sepsis and thrombosis combined—"the true phlegmasia."

May I at once state that I do not propose to discuss cases in the first three of the above groups, viz. those due to pressure, general disease, and the general acute septic processes, but rather to limit my remarks to cases occurring after

labour in which the variety is either that of thrombosis or thrombosis and sepsis combined, and further, rather to limit my words to the type of disease illustrated by the cases I quote.

My chief difficulty, indeed, is to get a sufficient number of cases together to be of any value, for cases of "white leg" are few and far between, and in these days of antiseptic midwifery the real case of phlegmasia alba dolens seems to be a very rare thing.

Then, again, I am met with the difficulty of post-mortem investigation, for happily few cases are fatal, and methods of investigation are very difficult to carry out, particularly those of bacteriology and tube cultivation, which I am sure is the method by which we shall learn much, and which I intend to pursue in the investigation of this disease.

The cases I quote are mostly taken from the Hospital records (St. Bartholomew's) of "Martha Ward" and from the Outdoor Midwifery Department; and even in ten or twelve years very few cases seem to have occurred, and these cases I quote rather to show that the true phlegmasia alba dolens is a very rare occurrence, while the thrombotic form of swollen leg is very much more common.

That sepsis plays a great part in many cases of white leg I am convinced, since we find definite pelvic signs of such infection early, with definite signs of peri- or parametritis and so forth combined with evident clinical symptoms, and there is strong evidence in such cases for believing that the presence of septic material in the blood has an influence upon the production of coagulation and the involvement of the lymphatics, as seen in diseases apart from pregnancy, and though the explanation of many cases of true phlegmasia appears to fall under this category there are many which do not. The pathology of true phlegmasia alba dolens at present appears to be unknown. Possibly lymphatic obstruction with venous thrombosis may explain it, the septic element being the great factor, and producing a disease akin to erysipelas and cellulitis;

but it seems insufficient, and it seems to me that rather there may be a definite micro-organism, as yet undiscovered, producing a special and severe inflammation and infiltration of the tissues,—a special cellulitis may I call it?—which we term "phlegmasia;" this view can only be settled by proper bacteriological research. Such legs as these are the true brawny white leg which I believe is commonly described in text-books, and which I maintain is very rare.

The clinical aspect of such cases of true phlegmasia is that at the commencement there is pain and tenderness in the groin or along the course of the femoral vein, which may be felt, but sometimes the tenderness or the swelling prevents this, or the thrombosis is absent: soon the pain and tenderness extend over the whole limb. With the onset of the pain, or in a day or so, swelling appears, which gradually spreads and increases in hardness; it is not like ordinary œdematous or anasarcous swelling, and does not pit on pressure; it is elastic, and nearly as solid as an india-rubber ball. The swelling may attack at once the whole limb, but frequently commences above and spreads downwards; it affects all parts of the limb, not merely the upper parts only, it rounds off the figure of the limb, but does not distend the skin or destroy the form so entirely as a huge anasarca. In a fully-developed case the limb presents a remarkable appearance. The swelling may even affect the labium and hip of that side. Its colour is pale or sallow like that of a dead leg, hence the term white leg; but besides being pale it is glossy, or more clearly its surface resembles that of polished marble. The limb may be kept in an extended attitude or slightly flexed, movement of it causes much suffering, and the power of voluntary motion is almost completely lost while the disease continues. After the disease has lasted nine to ten days it generally makes no further progress, but recedes, the pain and swelling diminishing, but weeks may elapse, or the cure may be further or even indefinitely delayed.

Sequelæ, complications, and prognosis.—The most frequent sequela of phlegmasia is persistent aching of the limb increased by cold and damp, or tendency to œdema of the ankles or a persistent œdema in that situation. Sometimes the limb remains deficient in muscular power, or is powerless or wasted, and in some very uncommon cases it is the subject of a great hypertrophy of the cellular tissue or elephantiasis, simultaneously with muscular wasting; and the elephantiasis may be complicated with more or less extensive and intractable ulceration. Such cases probably result from permanent destruction of large vascular passages, and demand occasional amputation.

The disease is sometimes complicated with such conditions as inflammation and suppuration of the intrinsic joints of the pelvis, erysipelas, limited periphlebitic abscesses, diffuse suppuration of cellular tissues, or gangrene of any part or of a varying amount of the entire lower portions of the affected limb.

Other complications are often more fatal, embolism and pyæmia, and are the consequences of detachment of a clot from the femoral or still larger veins, or of a more slow breaking up of a thrombus into *débris*, more or less puriform, which enters the circulating current.

This description, which I take from the late Dr. Matthews Duncan, and which is described in most text-books, is, I believe, a very rare form of disease, and I have only seen two such cases at St. Bartholomew's; both these were evidently septic, resulting in one case from sloughing of the uterus after repeated attempts to remove the remains of a large cystic myxoma of the chorion, and in which the pelvic and uterine veins contained purulent breaking-down thrombi, and with the clots extended directly into the femoral. There was a large parametric effusion on the left side; the posterior wall of the uterus had sloughed.

The other case occurred in a woman with a large gangrenous fibroid of the uterus which had become

acutely inflamed; she had all the symptoms of acute septic poisoning, and died.

Such cases as these and of the type described above of "phlegmasia" I believe to be invariably septic, and are frequently associated with signs of pelvic inflammation and severe constitutional symptoms. Cases in which we find evident pelvic signs I think are not hard to understand, being cases of lymphatic infection and inflammation spreading down from the uterus and pelvis itself, and taking on the type of severe phlegmonous inflammation of all the tissues, and as I suggest due to definite micro-organisms; indeed, they resemble some cases of parametritis.

Cases in which no definite pelvic signs are present are hard to understand, but we may get involvement of pelvic tissues which we cannot feel *per vaginam*. I regard these cases as primarily lymphatic involvement, the veins being affected secondarily; but the affection of the tissues of such legs is very acute, and is peculiar, and resembles no other form of disease.

The pathology is yet unknown. Many views are held, and the great barrier to progress in our knowledge is the rarity of reliable necropsies and the doubtful character of the evidence they afford.

Such theories as metastasis of the lochia or milk are long ago exploded ideas. The discovery of the lymphatics in the last century led to the first attempts of a truly scientific kind to solve the mystery, but our knowledge of the origin and distribution of these vessels is yet imperfect.

The next step was the discovery of thrombosis in the veins of the affected limb; but cases occurred in which thrombosis did not exist, or if it did the leg was in no way characteristic, and the pure phlebitic pathology will not explain the cases of real white leg.

Then came the ideas of an essential blood-change which gave rise to this condition. Lastly, we are left with the views of an acute septic infection of a special character

to which I have already referred. I admit that none of these seem satisfactory.

I do not intend in this paper to deal with such cases, interesting as they are; nor to go into the question of swollen legs in connection with general disease, phthisis, typhoid, cancer, and so on; nor with cases in which mere pressure is the cause; nor into the great group of septic cases where a definite focus of infection is evident,—but rather to bring forward a few cases of swelling of the legs after confinement which I believe to be of a different nature and to be of far more frequent occurrence than those cases of phlegmasia as described in books, and which clinically I believe to be the common variety of so-called white leg.

I would take the class I quote as types of what we generally meet with in practice. The cases I append are taken mostly from the notes of Martha Ward at St. Bartholomew's during the last ten or twelve years, and I venture to point out certain differences in their history, course, symptoms, and results from those which are generally described, and I believe such cases to be far more common than those of the brawny white phlegmasia dolens.

The leg which I now describe as the common form, and which I will term thrombotic, in the list of cases I append is rarely described as "white and hard," but rather dusky than white, and which pits easily, certainly for the greater part of the time, and in which the veins and thrombosis play the great part and lymphatic trouble little if any, though in some cases we get both.

Clinical course of the commoner forms.—There are rarely any definite symptoms till the second week after delivery, about the tenth to fourteenth day, and it may be later; therefore such legs are late accidents of the puerperium. They may occur in pregnancy, but are much rarer in that condition. Varices seem to predispose. Multiparity is the rule. About this time the patient may feel indefinitely ill; restlessness and malaise are observed for a day

or two before the definite onset, which is frequently accompanied with a rigor or feelings of chilliness. The temperature is, I believe, always raised, and very high temperatures are recorded. Then comes the acute pain in the leg, generally the left; it is often very severe, sometimes quite sudden and of a stabbing, burning, or neuralgic character, and is commonly felt in the course of some large veins or in the region of the groin, in Scarpa's triangle, sometimes in the calf, or behind the knee. The leg feels to the patient heavy and as if she could not or dare not use it; then in a few hours it commences to swell, most commonly from above downwards; it appears to be an œdema, and the leg in a few days may be two or three inches larger than its fellow. The leg is not white at all, but dusky, and often mottled with little cutaneous veins; sometimes larger varices are evident. The leg pits deeply, and the œdema is not of the brawny solid type described in the other form.

To the patient the leg feels heavy, useless, and dead, and yet may be very painful, and the patient cannot, will not, or dare not move it.

If you examine such a leg carefully, the thrombosed veins can be constantly felt, particularly the femoral, as semi-solid tender cords; other veins may be made out in a similar way, such as the internal saphenous, external saphenous, or popliteal. Not only this, but in the veins can sometimes be made out definite knotty swellings which I fancy are either clots or thrombosed varices, often very tender.

Another point is the curious distribution in such legs of definite "*tender spots*" which can constantly be observed, where the patient complains of the most acute pain, particularly if the leg is handled; such are Scarpa's triangle, the region of Hunter's canal, the popliteal space, the upper part of the calf, and at the inner malleolus of the ankle—spots corresponding often to the junction of deep and superficial veins through holes in the fascia, and I believe the pain to be due to the pressure of the fascia on

the enclosed thrombi, and it is evidence too of the deeper veins being affected. Sometimes small superficial veins can be felt thrombosed as long cords and with local phlebitic thickenings which at times suppurate and lead to cutaneous abscesses or ulcers difficult to heal. The surface of such legs appears dusky and mottled, and is far from being white. Enlargement of the glands of the groin is very uncommon, and the lymphatics are rarely affected or only locally.

As the case goes on the swelling increases, although the pain in the leg lessens and the veins are less easily felt. The leg is kept quite motionless by the patient, and the toes cannot be moved; passive movements of the leg are not generally painful, though this experiment need not be tried. Later the œdema begins to decrease, the leg ceases to be painful, it still pits, but you can no longer feel the veins; the patient gradually regains a certain amount of power, but it is a matter of weeks or months before the leg is in any way useful, and in some cases the leg remains permanently damaged—continually swelling, often painful, and liable to chronic and troublesome ulceration on any prolonged exertion, rendering the woman more or less lame for life.

Rarely the thrombosis seems to commence in the veins of the leg primarily, for instance in those of the calf, and the clot to extend upwards. Sometimes both legs are affected (as in Cases 5, 6, 8, 10); in such instances one leg becomes affected after the other, never simultaneously; in each instance the other leg runs a similar course.

The arms may be affected in a similar way, but this is very unusual, and does not commonly occur in the puerperal state; if so it is generally a very grave symptom, often part of a general septic condition.

The *course of the temperature* is curious, and difficult perhaps to explain. Almost in every case we get pyrexia; it comes on with the initial swelling, and commonly lasts a fortnight; often there is an initial rigor. The temperature itself is of an irregular up-and-down type, gradually

falling to normal. If the other leg be affected later, again a similar rise of temperature, and yet in these cases we get no distinct evidence of sepsis, no third day rise of temperature, no pelvic symptoms or signs of peri- or para-metritis, and yet on the tenth to fourteenth day or later the swollen leg and pyrexia come on. Possibly the simple process of thrombosis and phlebitis account for this apart from renal septic infection.

As regards *pain*, patients at all events at first suffer acutely, and are often very ill; the pain frequently is severe enough to keep them awake at night.

Complications and sequelæ.—As a general rule the clot in the veins shrinks up or becomes disintegrated, possibly tunnelled, and the circulation is restored; rarely the vessel is permanently obliterated, and the leg in such cases recovers but slowly, or it may never do so completely, or other veins take up the circulation, becoming distended and varicose.

Rarely the clot suppurates and a local abscess forms, and in definitely septic cases may become detached and lead to septic embolism or infarction.

Sometimes—and this is *the* great danger in ordinary cases of thrombosis—the clot may be dislodged, leading to pulmonary embolism and sudden death, or short of that serious respiratory trouble; one case I quote is an example of this (No. 8). Five weeks after the onset of the case, when measuring the leg, the patient was seized with violent dyspnœa and nearly died; later she had hæmoptysis and several rigors; she eventually got well. This detachment is rare except as the result of premature exertion or injudicious manipulation of the affected veins, and in any case of white leg is a warning not to begin massage or like treatment too early. I shall refer to this later.

Prognosis.—(*a*) To *life* favourable; (*b*) to the *limb* unfavourable.

Cases of double white leg are more serious. Previous complications of labour also add to the dangers of a case, particularly hæmorrhage, either ante- or post-partum, and

I lay great stress upon this factor in relation to the disease.

Most cases eventually get well, unless for the accidental dislodgment of a clot, which is ever a serious danger, but for the leg itself the outlook is not good, and many such legs are permanently damaged.

Let me now refer shortly to my list of cases arranged in a tabular form. I also append fuller details, in which I note the special points of interest in each case for comparison, viz.:

(*a*) *Parity.*

(*b*) *Age.*

(*c*) *Number of Pregnancy.*

(*d*) *Complications* of labour, particularly as regards hæmorrhage.

(*e*) *Day of onset.*

(*f*) *Leg affected*—left, right, or both.

(*g*) *Conditions* noted as to colour or œdema or thrombosed veins.

(*h*) *Temperature.*

(*i*) *Complications,* if any.

(*j*) *Result.*

These cases are mostly collected from the records of St. Bartholomew's from the years 1882—1894, with a few others. They are as follows:

Cases of White Leg (so called),

Case.	Parity, age.	No. of pregnancy.	Complications of labour, if any.	Onset, date of.	Side affected, right or left.
1	Multipara, æt. 19	2nd	None	10th day; shivered	L.
2	Multipara, æt. 23	4th	None; probably phthisis before delivery; hæmoptysis; pneumonia left apex on admission	12th day; no rigor	L.
3	Multipara, æt. 23	2nd	None	10th day; no rigor	L.
4	Multipara, æt. 30	7th	Placenta prævia; 3 days in labour; very severe loss; previous varicose veins	13th day	L.
5	Multipara, æt. 23	2nd	Lingering; "lost too much;" 14 days before confinement right leg painful and swollen, took to bed 3 days before confinement on account of this	Right leg 14 days before delivery; left leg on 11th day after	R. L.
6	Primipara, æt. 24	1st	None; "easy"	8th day rigor; 11th day pain and swelling in left leg; 29th day right leg swollen	L. R.
7	Multipara, æt. 37	8th	Placenta prævia, version; forced delivery on account of mother's condition; very severe bleeding, and also 14 days before delivery	2 days after delivery rigor	R.
8	Multipara, æt. 29	8th	Severe bleeding before placenta expelled, and for 4 hours after; previous varicose veins	10th—12th day 28th day; rigor	R. L.

arranged in tabular form.

Conditions noted.	Temperature.	Complications.	Result.
Pitting not marked; leg very tender; veins felt thrombosed	5 days' pyrexia	None	Good; 18 days in the hospital.
Painful; œdema all the time; pitting	7 days' pyrexia	None	Good; 23 days in the hospital; recovery.
White; no marked œdema	5 days after admission temp. 103°	None	13 days in the hospital.
Œdema; pitting; left leg 2 in. larger than right; femoral and saphenous veins felt thrombosed	14 days' pyrexia after admission	None	29 days in the hospital; recovery.
Both legs whitish, but pitted; femoral veins in both thrombosed	102·5° on admission; 24 days' subsequent pyrexia	Local phlebitis of calf and foot	42 days in hospital; left with both legs swollen; very bad case.
Pitting; œdema; femoral veins felt thrombosed; pain in Scarpa's triangle; both legs pitted	102·2° on admission (pneumonia left base?); pyrexia 6 weeks; ordinary temp. = 102°—104°	Pneumonia (?) Very severe case	3 months in the hospital; both legs swelled after getting up.
Pitting; œdema; femoral veins and saphenous veins felt; leg tender	On admission temp. 100·4°; 16 days' subsequent pyrexia	Nothing made out in pelvis	Good.
Pitting; œdema; femoral and saphenous veins felt; "tender spots;" phlebitis; left leg exactly similar to the right	Pyrexia on admission to 14th day 14 days' subsequent pyrexia	Large right parametritis; attack of pulmonary embolism on 39th day; very severe dyspnœa and hæmoptysis	3½ months in hospital; nearly died. Subsequent recovery.

Case.	Parity, age.	No. of pregnancy.	Complications of labour, if any.	Onset, date of.	Side affected, right or left.
9	Multipara, æt. 36	7th	Post-partum hæmorrhage; 18 hours' labour (admitted on 28th day)	11th day; rigor	L.
10	Multipara, æt. 27	4th	Post-partum hæmorrhage (child born before doctor arrived)	Right leg 12th day Left leg 23rd day	R. L.
11	Multipara, æt. 30	7th	17 hours' labour; retained placenta; severe post-partum hæmorrhage	11th day; rigor	L.
12	Multipara, æt. 36	7th	32 hours' labour; child dead; very severe post-partum hæmorrhage; uterus flushed out on 10th day	13th day	L.
13	Primipara, æt. 22	1st	Twins, premature; severe hæmorrhage; instruments; laceration	18th day	L.
14	Multipara, æt. 29	Miscarriage, 2nd, at 3rd month	Hæmorrhage slight	History indefinite, but 1 month after confinement pain in right knee and calf	R.
15	Multipara, æt. 26	2nd	"Lost a good deal"	(Not mentioned)	L.
16	Multipara, æt. 20	5th	Severe flooding; very long labour; great collapse from loss of blood; no instruments	10th—12th day; rigor; great pain	L.

Conditions noted.	Temperature.	Complications.	Result.
Leg dusky and pitted; femoral vein felt	Pyrexia on admission and for 6 days afterwards; highest 104°	Nothing in the pelvis	1 month in hospital; recovery.
Pitting; œdema Livid; pitted; pain and tender spots	10 days' pyrexia; 8 days' subsequent fever	Nothing in the pelvis	2 months in the hospital.
Œdema; thrombosed veins felt	Temp. = 103° on 2nd day; pyrexia for 23 days; rigor on 11th day	Nothing in pelvis	10 weeks in bed; subsequent swelling of limb; is now well, 8 months after.
Œdema; pitting; leg dusky; superficial veins marked; tender spots	Pyrexia on 16th day; temp. 103·2°; 21 days before temp. reached normal	None	6 weeks in bed; subsequent recovery, but leg still swells.
Leg painful; no veins felt at first, but later leg "blue"	102·2° on 3rd day of thrombosis; normal on the 20th day after	Femoral glands markedly enlarged	Recovery.
Right leg very swollen below knee; brawny; no mention of veins	Long history of pyrexia and rigors (pyæmic ?) before admission	Abscess and sloughing of calf of right leg	Amputation below knee 2 months after admission; recovery.
Leg swollen; pitting; "not white;" marbled veins; femoral and saphenous felt later, not at first	101·2° highest, lasted 17 days	Femoral glands enlarged; nothing in the pelvis	Recovery; in hospital 31 days.
Left leg very swollen; "covered with large veins;" pitted; tender spots very painful	"Feverish for 3 weeks" (temp. not given)	Thrombosis; phlebitis; abscesses and ulceration	6 months in bed; never recovered; is lame now; original trouble 20 years ago.

You see the above cases exhibit a few of the points I wish to bring before you in this paper. Chiefly these:

(*a*) Multiparity is common.

(*b*) White leg is often associated with previous loss of blood or difficult labour.

(*c*) The average day of onset is about the tenth to fourteenth day in simple cases, and earlier in those with evident signs of sepsis.

(*d*) The left leg is more commonly affected than the right.

(*e*) Cases of double white leg do occur, though not commonly, and they invariably succeed one another in their onset, and do not occur simultaneously.

(*f*) Œdema is the rule in the common variety, pitting being marked all the time; the leg is rather dusky than white.

(*g*) Pain and tenderness generally occur, and "painful spots" in certain definite situations are generally to be observed.

(*h*) Pyrexia lasting fourteen to twenty-eight days is the rule, accompanying the thrombosis. Rigors mark the onset in some cases.

(*i*) Evident pelvic signs of sepsis such as peri- or parametritis are not common, and in such cases the pyrexia is marked from the first.

(*j*) Pulmonary embolism is uncommon, but may occur at any time, even very late.

(*k*) Such legs are rarely brawny and white, but rather livid, and pit easily, and differ in this respect from true phlegmasia.

(*l*) Most patients recover—in fact it is the rule,—but the recovery of the leg or legs is not so hopeful, and protracted convalescence occurs.

I next append an abstract of the above sixteen cases, arranged more or less in a tabular form, going shortly into the question of figures and percentages in the consideration of a few of the particular points which these cases show.

Abstract of the Cases given.

A. *Parity:*

Multiparæ	14
Primiparæ	2

B. *Complications of Labour:*

1. Placenta prævia	2
2. Ante-partum hæmorrhage	1
3. Post-partum hæmorrhage	10
4. Miscarriage	1
5. Labour lingering or instrumental	3
6. Version	2
7. Forced delivery	1
Labour stated as normal	3

C. *Date and Time of Onset:*

1. White leg coming on before delivery	1
2. " " after "	14
3. " " after abortion	1

Day of Onset:

Average	10th to 14th day
Earliest	3rd "
Latest	29th "
Onset accompanied by rigors	5th "

D. *Leg affected:*

Left leg	14 times
Right leg	6 "
Cases of double white leg	4

E. *Condition noted:*

1. Not white; blue with œdema; pitting	14
2. White or brawny	2
Femoral or saphenous or other veins felt thrombosed	13

[In the 4 cases of double white leg, in each one leg was affected before the other.]

F. *Conditions of Temperature* (in all = pyrexia):

Rise of temperature coincident with the thrombosis	12
Rigor noted with onset	5
Pyrexia noted before onset, probably due to pelvic complications and "sepsis," of which signs could be discovered at the time	4

G. *Average Duration of Pyrexia* . . . 22·4 days

H. *Complications noted:*

1. Local phlebitis	3
2. Pneumonia	1
3. Parametritis	1
4. Pulmonary embolism	1
5. Severe sloughing of leg necessitating amputation	1
6. Femoral glands enlarged	2

I. *Average Duration of (Hospital) Patients' stay in Ward* . . . . . 7·5 weeks
Longest . . . . . 3½ months
Shortest . . . . . 13 days
Many cases were admitted only after the condition was well established.

J. *Average Duration of Thrombosis, Swelling, and Œdema* noted . . . . 5·2 weeks

K. *Recovery of Patients (life)* 16
" " *(leg complete)* . . . 9
Cases noted where *the leg did not recover, but was more or less permanently damaged* 7
[One case lame twenty years after.]

Treatment.—The most essential element in the treatment of these cases is absolute rest in bed for a considerable period, and rather let the time be too long than too short. No case should be allowed to get up under six weeks, often longer, and should the other leg be similarly affected I would insist upon another period of six weeks' rest.

All needless manipulation of the leg and repeated examination of the thrombosed veins should be refrained from, remembering the dangers of embolism, and one should not be too anxious to begin systematic friction or massage too early.

In the early stages of the disease the limb should be kept at absolute rest, a little elevated and a little flexed upon a pillow, and guarded from all pressure by a cradle —generally a pillow lengthwise under the limb, folded around it on either side will do.

Warmth is good, and the leg should be wrapped loosely

in wool, which is so arranged that it can be removed or changed without disturbing the limb in any way.

For the *pain* I have found belladonna fomentations the best locally; they relieve pain and are nicer and cleaner than the older remedy of belladonna and glycerine. If necessary hypnotics may be given, chloral or bromide or both, or morphine, or some form of opium. I prefer the latter drug.

For the *pyrexia*, unless it be severe, little need be done. Generally cradling or sponging is good, if necessary quinine, or an ice-cap to the head. I do not like antipyrin and its allies.

As regards *food* it should rather be pushed in these cases if the patient can take it. Strong soups and essences, even fish and meat and red wines, stout or stimulants, as in most cases I have found that patients are already debilitated by severe labour and often severe hæmorrhage at the time of delivery or before.

In a really septic case one has a worse condition to deal with, and you can only hope to support the strength of your patient, and treat the local complications as they arise.

Later on, when the patient gets up a bandage is good; generally a nice even roller of domett is best. It gives firm, nice, elastic support, and I find patients prefer this to elastic stockings or Martin's bandage. Great care must be exercised to get the pressure quite even from below upwards, and the skin must be carefully watched as its vitality is low, especially over the shin, and if once a sore forms it is most troublesome to heal.

A month or six weeks after the patient has got up, gentle friction upwards with the dry hand is good, avoiding the regions of the thrombosed veins, and later on scientific massage and shampooing.

It is a good thing to take careful measurements of both legs as soon as the case is admitted, as the other leg may be affected later, and if you have no initial guide of

measurements you cannot compare the legs later or watch the increase or decrease of the œdema.

Summary and conclusions.—I would sum up with the following conclusions. The term white leg is somewhat misleading; under this term may be included several forms of the disease, some of which are very rare and some common enough in their occurrence. The distinction is perhaps not very important, but I think that the ordinary description given in books as the common form, viz. the "brawny, white, hard, painful leg, the real phlegmasia" is *not* of common occurrence, but rather the form of disease in which the leg is dusky and œdematous, and in which as far as can be ascertained thrombosis is the chief factor, and which I maintain to be the common variety which follows childbirth.

I would classify the cases into the groups previously mentioned, namely those due to pressure, disease, sepsis, and the lymphatic and venous forms; and of these, those due to mere pressure or coming on in the course of some definite disease, or those evidently from the first septic, I do not deal with, but compare rather the so-called lymphatic with the thrombotic legs, taking the lymphatic leg in a wide sense to mean the true phlegmasia of which the pathology is so obscure, and which I suggest is an acute cellulitis unlike any other disease, and due to septic micro-organisms, which is of very rare occurrence. The thrombotic form (of which the cases quoted mostly consist) I consider to be *the* common form, and in such cases the thrombosis which occurs can be ascribed rather to a blood change due to the increased tendency to coagulation in pregnancy, but in a greater measure to large blood loss either before or after delivery, placenta prævia, or post-partum hæmorrhage; such coagulation starts primarily in the uterine or pelvic veins, gradually spreading to the femoral, and this condition in the pelvis gives rise to no evident symptoms or signs that can be diagnosed; in ordinary labour it does not occur, but in those cases previously impoverished by loss of blood such coagulation

is more probable, while, if the other leg be affected, it is due to the extension of the clot, either from the other side or even across the junction of the common iliac veins and vena cava inferior.

The late onset of the symptoms in the puerperium is to be accounted for by the slow extension of the clot from the uterus outwards. The onset is generally from the tenth to the twentieth day.

The pyrexia which accompanies the thrombosis is the rule in these cases, and may last for a week or even more, but does not necessarily indicate a septic condition, though there are forms of thrombosis which are often combined with lymphatic obstruction, and in which sepsis is evident both from constitutional symptoms and pelvic conditions which can be easily made out.

Now the condition which I have attempted to describe is the commoner form of thrombotic leg, and not the rare cases of so-called true phlegmasia. In these thrombotic cases the leg is dusky and œdematous, with marked pitting, invariably painful, and with evident thrombosed veins and tender spots; both legs may be affected, but always one after the other.

The onset is late in the puerperium—tenth to twentieth day,—and is accompanied by pyrexia; multiparity is the rule.

Such cases run a definite course of about six to eight weeks before the swelling subsides. Complications are uncommon, but pulmonary embolism is the great danger, and this is very rarely seen.

The prognosis to life is good, few cases are fatal; but to the leg such good results cannot always be hoped for, the majority get well, but many remain permanently damaged.

As regards treatment, absolute rest for a prolonged period is necessary, with a general tonic treatment, since probably impoverishment of the blood or previous blood loss is the essential factor in the causation of this commoner variety of so-called white leg.

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Dr. PETER HORROCKS pointed out that the author's classification was one of white leg in general, and that it was only Nos. 4 and 5 that referred to "white" leg following confinement. He did not think that any evidence had been forthcoming to prove that there was such a distinction as the author made, namely, that some were cases of thrombosis apart from sepsis and others cases of thrombosis and sepsis combined. If the increased coagulability of the blood caused by excessive hæmorrhage were the cause, one would have expected the thrombosis to have occurred at the time of the labour, when the bleeding took place and when the coagulability was at its highest point. Again, one would have expected it to occur on both sides and perhaps in other parts of the body, whereas it was well known to affect one side only as a rule. To say that there was no evidence of sepsis in these cases in that there was no perimetritis and no parametritis was limiting the word sepsis to a very narrow meaning. In the most fatal form of puerperal fever there was, as a rule, no clinical evidence of either para- or perimetritis, and yet it was undoubtedly a septic disease. He believed that both of these classes (Nos. 4 and 5) were septic in origin; and he was not convinced that the microbe was different in the two sets, although it might be. He believed that they were septic on the following grounds. First, it was a well-known fact, attributed to the occiput being more frequently on the left side, that the left side of the cervix was more commonly lacerated than the right, and that lacerations of the parturient canal afforded entrance to microbes and would undoubtedly lead to clotting in the vessels affected. Secondly, that there was a more or less definite period of two to three weeks before the onset of the disease, which might be due to incubation. Thirdly, that

there was almost invariably more or less pyrexia, which could not be explained away on the hypothesis of mere clotting. Possibly ere long the microbe might be detected and the differences pointed out by Dr. Roberts in Classes 4 and 5 might prove to be due to the relative amount of veins or lymphatics involved.

Dr. HERMAN complimented Dr. Roberts upon his paper, which was one of permanent value, based as it was not upon books but upon cases, and containing original records of cases. The author proposed a classification of "white leg." He (Dr. Herman) suggested that the classification was really of "swelled leg;" for some of the conditions included in it were not "white leg," and had never had this name applied to them. He agreed with the author in thinking that the disease commonly called "white leg" was not septic; if septicæmia was present as well it was a complication. He knew of no evidence that white leg had anything to do with septicæmia; but as we had no information as to the comparative frequency of white leg before and after the introduction of antiseptics, or as to the bacteriology of white leg, it was not possible to be certain. Dr. Horrocks had spoken of it as due to "some form of sepsis." If sepsis was a disease with an indefinite number of undefined forms he did not know what disease might not be put down to "some form of sepsis." He (Dr. Herman) did not see in the table of cases any statement of how long the disease had been present before the patient's admission into the hospital. Possibly in some of them the non-pitting stage had been passed through before the patient's admission. He did not think that œdema from thrombosis was the same thing as the phlegmasia alba dolens, the classical description of which was that given by White of Warrington, afterwards of Manchester. He (Dr. Herman) was accustomed to teach that the solidity of the œdema in that disease was due to plugging of the lymphatics. He was aware that no anatomical evidence of this existed, but he thought that there were good clinical reasons for that opinion. In lymphangitis extending up a limb from a poisoned wound, the strip of inflamed lymphatics had the same brawny feeling as the whole limb had in phlegmasia dolens. In elephantiasis the lymphatics were known to be plugged, and the result was solid œdema like that of phlegmasia dolens, but persistent, and therefore leading to further changes in the limb. He had not understood Dr. Roberts to say that hæmorrhage *caused* phlegmasia dolens, a statement which Dr. Horrocks had criticised, but that it *favoured* phlegmasia dolens, which was different, and he thought undeniable. He thanked the author for his able and instructive paper.

Dr. AMAND ROUTH said that it was possible that had the author seen the cases reported at an earlier date of their illness,

he would have observed symptoms which corresponded more to the text-book account of the phenomena of "white leg." He had seen two cases where the initial symptoms were very severe, but very transient; one quite recently in a lady who had nearly lost her life from post-partum hæmorrhage. On the third day she suddenly had acute pain in the left calf, and when seen three hours after had a temperature of 101·6° F., and the calf was swollen, with a circumference of two inches more than the right leg. The calf was quite white, extremely tense, glistening, and did not pit, and it had, in short, all the recognised signs of true phlegmasia dolens. Next morning the calf was less swollen, less white, and pitted, but the pyrexia remained, and on the tenth day Dr. Stormont Murray, who was in attendance on the case, states that the right leg became similarly affected. When the swelling and pain begin in the calf, as in this case, and the femoral vein can be demonstrated to be free from tenderness and induration, it is obvious that any thrombosis which may exist in the popliteal vein has not occurred by extension of pelvic thrombosis. There can be no doubt that hæmorrhage is one of the elements in the causation of these cases, but why thrombosis should occur after the lapse of some days, and not at once, was difficult to explain. It was also not easy to explain the presence of pyrexia, with perhaps an initial rigor, unless there was some sort of "sepsis" as another element in the cause of the lymphangitis, or at all events the blocking of the lymphatics, which so often was the first sign in these cases, but which he believed often cleared up very early in its progress.

Dr. Macnaughton-Jones said that he had always taught that the symptomatology of phlegmasia dolens depended upon the relative primary and secondary involvement of the veins or lymphatics, and the degree of cellulitis present. Fox's original view had much in it. The differences in the symptoms in cases were often striking as regards date of occurrence, pitting, colour of limb, and the course of the affection. The greatest obstetric authorities held that pressure did account for the disease in certain cases. He denied that it was necessary to look to sepsis alone as a cause. Every evidence of septic causation was absent in some cases, both local and general. The anatomical peculiarities in the left side of the pelvis, and the position of the left iliac vein under the right common iliac artery, were more likely reasons for the left limb being the one more frequently involved. He did not attach much importance to the contention regarding injury to the uterus being more frequent at the left side, or the position of the head in delivery. He had seen cases of phlegmasia (not puerperal) in which no possible *septic* infection could be assigned. Painful spots were not peculiar to any special form of phlegmasia; they were found in all. High temperature was not to be taken as a proof that sepsis was present. This

was a matter of common observation in various post-partum conditions. The paper was useful as opening the ground for further elucidation of an obscure etiology, and by emphasising the essentially thrombotic nature of the disease in certain cases.

Dr. GRIFFITH said that Dr. Roberts's paper was of great value in emphasising the distinction between true phlegmasia dolens and simple thrombosis. That hæmorrhage complicating labour was a very important factor in the causation of white leg was not a matter of doubt, but the objection which Dr. Horrocks mentioned to this as the essential cause, namely, the considerable interval which elapsed between it and the appearance of the characteristic symptoms, applied with equal force to the theory of septic infection which he advocated. Thrombosis in both forms of the disease, as a rule, started from the uterine veins and extended gradually to the common iliac, and it did not seem a matter of surprise that acute symptoms should arise when this great channel was blocked, nor necessary to suppose a further cause for them.

Dr. ROBINSON drew attention to the researches of Widal into the microbic origin of certain cases of phlegmasia dolens. This observer had found the clots in the thrombosed veins infiltrated with chains of cocci—probably *Streptococcus pyogenes*. The walls of the veins had also been invaded by these organisms. Other observers considered that the *Bacillus coli communis* played an important part in the causation of this morbid condition.

The PRESIDENT said that Dr. Roberts's careful and thoughtful paper showed how obscure the subject was. To acknowledge ignorance was the first step towards knowledge. He thought the proposed classification was open to criticism. For instance, "Cases due to pressure" (Class I) might also be "Cases of thrombosis apart from sepsis" (Class IV). Again, "Cases associated with general disease" (Class II) might also be "Cases of thrombosis and sepsis combined." It would make it clearer if an instance of each type were given. A curious fact in the group of cases here recorded has not been referred to. It will be seen that three out of the four cases of double white leg (Cases 5, 8, and 10) began in the *right* leg. This was probably a coincidence and would not appear in a larger number, but it was curious.

Dr. ARTHUR GILES wished to call attention to two points. There was one interesting fact, among others, which came out on reading through the table of cases, and that was that in only one case was there strong evidence of sepsis. This was case No. 14, which was complicated by abscess and sloughing in the calf of the leg, necessitating amputation. Now this case was also the only one in which delivery was not at term; it was a miscarriage at the third month. This amounted to presumptive evidence in favour of the view supported by the President

and other speakers that the ordinary "white leg" was not due to septicæmia. The second point was the explanation usually given of the greater frequency of affection of the left leg, namely, that it was associated with the greater frequency of left occipital presentations. Many text-books gave this explanation, but it seemed to him hardly valid. Injuries due to the head would affect the cervix mainly, and the results of cervical injuries were found chiefly in the connective tissues of the pelvis rather than in structures so far off as the veins of the leg. In nearly all Dr. Roberts's cases the pelvis was unaffected. Some other explanation therefore seemed necessary.

Dr. Roberts begged to thank the President and Fellows of the Society for the kind way in which they had received his paper. He felt himself under great difficulties in introducing such a subject, but he thought that a record of a few cases would be interesting, and also that in such cases he had ventured to point out certain matters of interest, especially that in such cases the leg which most commonly occurred was not of the type described in books—a true phlegmasia—but rather of the form which Dr. Roberts had described as thrombotic. In the discussion which followed, so many Fellows had spoken, and had touched upon many of the chief points, and so completely, that Dr. Roberts had, he feared, little to add or to reply to. Dr. Roberts admitted that he had not considered the great subject of phlegmasia, but only recorded a few cases that had fallen under his notice, and from the facts observed had constructed the short paper the Fellows had so kindly listened to to-night.

To Dr. Horrocks Dr. Roberts said that his classification of so-called white leg was merely a proposal, but that he thought there was a distinct difference in the forms described in text-books as phlegmasia, and those which he (Dr. Roberts) proposed as the thrombotic form, as shown by his cases. Dr. Horrocks regarded all such cases as septic, and thought such legs were merely stages of the same disease. Dr. Roberts did not think that a rise of temperature necessarily indicated sepsis, and the more so that in cases of septicæmia (puerperal fever) the onset was much earlier than in the form of leg he described as thrombotic, the average being the third day in sepsis and tenth to twentieth in his cases. As to pelvic signs Dr. Roberts thought that in cases where they were absent it was quite possible that thrombi might (in the uterine and broad ligaments) give rise to no physical signs also. As to the question of the left leg being affected before the right, Dr. Roberts thought the question of anatomy might explain this and injury in parturition. Dr. Roberts thought extension of the clot, either across the vena cava inferior or across the broad ligaments, explained the affection of the other leg at a later

period. As to the different incubation periods of various septic micro-organisms, Dr. Roberts could not express an opinion with reference to white leg.

Dr. Roberts thanked Dr. Herman for his kind remarks as to his paper on observations on cases in the hospital. He agreed with Dr. Herman in thinking that there was a distinct difference in the legs swollen after confinement, and that the fine brawny white leg was distinct from the thrombotic form he ventured to describe. As to onset, Dr. Herman agreed with Dr. Roberts that in real puerperal sepsis we had evidence of such disease much earlier (third day) than in cases of swollen leg such as Dr. Roberts described. Dr. Roberts agreed that in true phlegmasia there were distinct hard bands such as Dr. Herman mentioned, which afforded evidence of probable lymphatic involvement. Dr. Roberts thought that previous loss of blood was a predisposing factor in the thrombotic form.

Dr. Amand Routh asked Dr. Roberts if he had observed cases from the onset, and whether in many cases of true white leg there might not be a stage of initial œdema which escaped observation. Dr. Routh quoted an interesting case of white leg with early onset of hard swelling with previous œdema, also with post-partum hæmorrhage. Dr. Roberts suggested that the early onset pointed to acute septic cellulitic swelling. The occurrence of post-partum hæmorrhage, he thought, was a frequent precursor, at all events in the thrombotic form. Dr. Routh pointed out the curious occurrence of some cases of primary commencement of the swelling in the calf. Dr. Roberts could not explain this beyond suggesting that it was possible that after severe loss of blood, which he believed was a common occurrence in such cases, that thrombosis might occur in the peripheral veins also, especially with previous varices.

Dr. Roberts thanked Dr. Macnaughton-Jones for his exceedingly kind remarks on his paper. He agreed with Dr. Macnaughton-Jones that rise of temperature would not necessarily indicate sepsis at all. Dr. Roberts thought that Dr. Macnaughton-Jones's suggestion of pressure as a cause of thrombosis in the form of leg he had described as common was not the only factor in its production, but that loss of blood previously might be another factor. Dr. Roberts had only suggested the classification of the various forms, and admitted that those of pressure, sepsis, and general disease, such as phthisis, typhoid, &c., might be associated with conditions apart from pregnancy. Dr. Roberts rather wished to point out that the phlegmasia alba dolens described in text-books did not seem the common form of swollen leg after labour. He had observed the "tender spots" described in nearly every case of thrombosis.

Dr. Roberts thanked Dr. Robinson for his remarks on the researches of Widal as to micro-organisms identical with septicæmia (*Staphylococcus pyogenes aureus*, &c.). Dr. Roberts was unaware of this point, but he had suggested in his paper that true phlegmasia was a disease due to micro-organisms, and that it was a peculiar form of acute cellulitis of a septic nature. He was sorry that he could not propose a better classification of so-called white leg.

Dr. Roberts begged to thank Dr. Champneys for his kind criticisms. He admitted his classification was imperfect, and that possibly Dr. Champneys' suggestion that the term "swollen leg" after confinement would have been a better one, and that a distinction should have been made between cases in connection with disease and pressure, &c., from those occurring after childbirth. Dr. Roberts could not explain Dr. Champneys' kind suggestion (which Dr. Roberts had not observed) that in the cases of double white leg (Nos. 5, 8, 10, and 14) the right leg was affected before the left; Dr. Roberts had observed that in most cases the left was the first affected. He wished to say that he meant by sepsis infection in a broad sense, not any definite specific micro-organism.

Dr. Roberts thanked Dr Griffith for his kind remarks, and agreed that the pathology of true phlegmasia was at present unexplained, but he suggested that a special micro-organism existed and that the swelling was a special acute cellulitis involving other parts than the leg only, such as the vulva, groin, and buttock, and that bacteriological research was wanted to prove this point. Dr. Roberts also agreed with Dr. Griffith that high temperature might be explained on other grounds than sepsis.

Dr. Roberts thanked Dr. Giles for pointing out that in the one severe septic case (No. 14) amputation was necessary after sloughing of the calf, and that this occurred after miscarriage and not labour. Dr. Roberts could not explain this; he had taken the note simply as recorded. Dr. Giles also asked as to presentation. He was sorry that he could not afford information on this point in all the cases, and that he had not made a point of this in his cases. In most of the cases taken this point was not mentioned in the records from which the notes were taken. Dr. Roberts thought the occurrence of left side injuries to the cervix combined with left-sided white leg was to be explained in septic cases, as Dr. Giles suggested, by direct transference of sepsis through lacerations, but that it did not explain the common occurrence of thrombotic legs unless such thrombosis started from lacerations, which Dr. Roberts thought possible apart from sepsis.

JUNE 5TH, 1895.

F. H. CHAMPNEYS, M.A., M.D., President, in the Chair.

Present—60 Fellows and 7 visitors.

Books were presented by the St. Bartholomew's Hospital Staff, Dr. Rosenau, Dr. Watt Black, Professor Kleinwächter, Dr. Pinard, and the Bristol Medico-Chirurgical Society.

Henry Huxley, M.R.C.S.Eng.; George Stanley Dodgson, B.A., M.B., B.C.Cantab.; and Sidney Joseph Stuck, M.R.C.S., were admitted Fellows of the Society.

The following gentleman was elected a Fellow of the Society:—William Edwin Falkingbridge Tinley, M.B., B.S.Durh.

The following gentlemen were proposed for election:—Alfred Charles Coles, M.D., C.M.Edin. (Bournemouth); Ernest Cross, M.R.C.S.; George Horatio Jones, L.S.A. (Teddington); John Martin Munro Kerr, M.B., C.M.Glas. (Glasgow); James Newstead, M.R.C.S. (Clifton); R. C. Priestley, M.A., M.B.Cantab.; Alfred William Robson, L.R.C.P.Edin. (Birmingham).

CASE OF MISSED ABORTION, IN WHICH AN EARLY EMBRYO IN ITS AMNIOTIC SAC WAS RETAINED IN THE UTERUS FOR EIGHT MONTHS.

Shown by WILLIAM DUNCAN, M.D.

THE fœtus and amnion shown were removed from a patient with the following history:

A. J—, aged 27, was married in May, 1894. Though previously regular she saw nothing until September, when she had some loss of blood. From September, 1894, there has been no further loss, nor has the uterus materially altered in size up to the date of her admission on May 8th, 1895.

On examination the cervix uteri pointed downward and backward; bimanually the uterus felt as large as a fist.

For a week after admission the patient had irregular rises of temperature; on the 13th it reached 103·4°.

May 16th.—The cervical canal was dilated with Hegar's dilators, under an anæsthetic. The amniotic sac, the size of a duck's egg, was felt lax and free in the uterine cavity. It was seized with an ovum forceps and drawn through the cervical canal without difficulty. Then the decidua, which was caseous and in parts contained cysts, was thoroughly removed by means of a curette. The uterus then was irrigated with a 1 in 3000 perchloride of mercury solution.

Convalescence was uninterrupted, and the patient left the hospital on May 29th.

Dr. BOXALL remarked that, as the patient had for months been under his observation as an out-patient and frequently examined, he could guarantee the fact of the retention of the mole in the uterus. The last period occurred before marriage in May last year; a mere show took place in September, and soon after, when the case first came under notice, milky fluid

(which from the account given by the patient was absent in July) could be expressed from the nipples. For months after, the uterus, which had attained the size of a three-and-a-half months' gestation, scarcely varied, and when operated upon was but very little larger. The pregnancy seems, therefore, to have persisted for a year, and during the greater part of the time as a mole.

SLOUGHING FIBROID REMOVED BY HYSTERECTOMY.

Shown by William Duncan, M.D.

This specimen was removed from a woman aged 41, who for twelve months before admission had suffered from excessive loss at the periods, with a very offensive vaginal discharge in the intervals. The uterus was found to reach nearly up to the ensiform cartilage. Abdominal hysterectomy was performed, and when the uterus was removed it was found to contain a very large gangrenous mass in its interior.

The patient made a slow but ultimately perfect recovery.

UNRUPTURED TUBAL GESTATION REMOVED BY ABDOMINAL SECTION.

Shown by William Duncan, M.D.

Dr. Maclean stated that the ovary was present, and showed three small cysts; that the outer half-inch of the tube, whilst thickened, was free, and its fimbriated end patent, showing two ostia, one probing to the extent of a quarter of an inch, the other one inch. The gestation sac, which in size and general contour resembled a hen's egg, presented on section all the appearances

of being intra-tubal, the tissues of the tube being about a quarter-inch thick. Within the sac were the embryo and its placenta, both embedded in blood-clot, the appearances suggesting that placental dislocation with its consequent hæmorrhage had been the cause of the fœtal decease.

CONJOINED TWINS (THORACOPAGUS).

Shown by William Duncan, M.D. (for Mr. Geo. H. Jones).

The specimen was from a patient attended in her sixth confinement by Mr. Jones. One child (a male) was born normally in twenty minutes after labour set in. The conjoined twins were then delivered without difficulty, as they were only seven months' children. They only made one or two efforts at respiration after delivery.

Mr. Alban Doran observed that the twins were of the variety known as Thoracopagus. Further dissection was necessary in order to ascertain if some of the usual anomalies in this kind of monstrosity were present. As a rule, transposition of viscera, or "situs mutatus," was found in one of the twins, yet this anomaly was not constant. The hearts were sometimes fused.

CANCEROUS AND GRAVID UTERUS REMOVED *PER VAGINAM.*

Shown by William S. Playfair, M.D.

Dr. Playfair said that he had two specimens to show which were of interest in connection with the operation of

total extirpation of the uterus *per vaginam*, which seemed to him to be one of the most important topics of modern gynæcology.

The first bore on the *quæstio vexata* of the choice between infra-vaginal amputation and total extirpation in cases of malignant disease limited to the cervix. He was aware that many high authorities in this country, although not abroad, preferred the former operation. Secondly, he felt convinced that in ten years' time, when the technique and safety of total extirpation were more thoroughly appreciated, this would only be remembered as a curious illustration of unscientific surgery and misplaced conservatism. Partial extirpation of a cancerous organ was all very well, and much better than nothing, when it was much less hazardous than complete removal. That was considered to be the case some years ago with regard to the uterus, and it is difficult to acquire the idea that now complete extirpation can be performed with little if any more risk than partial. Take the case of the mamma. Is there any surgeon in his senses who would content himself with removing a slice of a cancerous breast instead of the whole organ? Why, then, should we apply a different principle to the uterus, and remove parts of it only? The only possible excuse for this is the theory that in cancer of the cervix the disease always extends downwards, and that the body is not affected. He had already, however, shown a specimen to the Society in which this was proved not to have been the case, and in which there were secondary malignant deposits in the fundus; and many other instances of the same kind have been brought forward.

In this particular specimen a patient had a fungating excrescence growing from the cervix about the size of an orange. This had been removed by a preliminary operation, and the uterus subsequently extirpated. Although the patient had been suffering from severe hæmorrhage for several months, it was found to contain an ovum of about two months. The existence of pregnancy had been

totally unsuspected. Now if supra-vaginal amputation had been performed the case would have been seriously complicated by cutting into a gravid uterus, and the risk to the patient greatly increased by this unforeseen occurrence. The specimen had been put away with the ovum *in situ,* but in the morning it was found expelled through the incision which had been made in the uterine body, doubtless through post-mortem contraction of the uterine fibres similar to that which has been noted in the cases of pregnant women accidentally killed, in whom the ovum has subsequently been expelled *per vaginam.*

SARCOMA OF THE BODY OF THE UTERUS REMOVED BY VAGINAL EXTIRPATION.

Shown by William S. Playfair, M.D.

The other case bore on the extension of total extirpation to cases in which malignancy was not proved, and on that account it might be open to criticism. The patient was 52 years of age, and had ceased to menstruate for a year. At the commencement of this year she was seized with very severe and nearly continuous hæmorrhages, which greatly prostrated her. Nothing could be made out *per vaginam.* The cervix was dilated by Hegar's dilators, and at the fundus a small fibro-myoma was felt about the size of a plum. The whole surface of the endometrium was rough, and felt as if small grit had been inserted under the mucosa. Nothing could be got away by the curette, and the hæmorrhages continued unabated. The conclusion arrived at from the clinical history was that the fibro-myoma was probably of old standing, but that the endometrium was probably in an early stage of sarco-

matous degeneration. This was of course quite uncertain and only a guess, but the case was so critical that total extirpation was decided on, for if the surmise was correct nothing else would obviously have been of any use. The patient made an excellent recovery, and has completely regained her strength. Subsequent microscopical examination showed an early stage of spindle-celled sarcoma.

Mr. Alban Doran asked if the sarcoma did not represent malignant degeneration of a myoma, such as he had himself described in the 'Transactions of the Pathological Society,' vol. xli. As decidual relics were known to undergo malignant degeneration, he asked if the patient had recently borne children. In Dr. Playfair's case of cancer and pregnancy the decidua was clearly normal.

ŒDEMATOUS MYOMA.

Shown by R. H. O'Callaghan, F.R.C.S.Irel.

SPECIMENS OF CERVIX UTERI REMOVED BY THE SUPRA-VAGINAL AMPUTATION FOR CANCER.

Shown by A. H. N. Lewers, M.D.

Dr. Lewers showed six specimens (Nos. 6, 12, 16, 17, 20, and 22 in his series) of cancer of the cervix uteri removed by the supra-vaginal amputation, in which eight years, seven years, five years, five years, two years, and two years respectively had elapsed without recurrence. Sections of the last two were shown under the microscope. Sections of the others had been shown on previous occasions.

He had now performed 49 radical operations for cancer of the uterus with 3 deaths, or a mortality of 6·1 per cent. Twenty-six of these were cases of supra-vaginal amputation, and among these there was no death; 23 were vaginal hysterectomies, and among these there were 3 deaths. Six cases of the hysterectomies were for primary cancer of the body of the uterus. In the remaining 17 cases hysterectomy was performed for cancer of the cervix.

As regards recurrence, taking first the 26 cases of supra-vaginal amputation, in 22 two years and upwards had elapsed since operation. Three of the 22 were incomplete,—that is to say, Dr. Lewers was aware at the time of operation that all the malignant growth had not been removed, owing to the disease having spread beyond the cervix (generally either to the vagina or to the connective tissue round the cervix), and 1 of the 22 cases was of doubtful malignancy. Deducting these there remained 18 cases for consideration, and of these 6, of which he now showed the specimens, were known to be at the present time (May, 1895) free from recurrence.

Among the 17 cases of vaginal hysterectomy, on the other hand, only one amongst those, where two years had elapsed since the operation, was now free from recurrence. In this one, No. 4 in his series of vaginal hysterectomies, four years and a half has elapsed since the operation. It may be said that recurrence in the series of hysterectomies was more frequent owing to the disease having reached a more advanced stage in the cases where hysterectomy was performed, and this is no doubt the true explanation. The conclusion Dr. Lewers drew from this fact, however, was that when the disease has passed beyond the stage—generally an early one—at which it can be cured by the supra-vaginal amputation, it has passed beyond the reach of cure by vaginal hysterectomy. In order to afford material for coming to a conclusion on this point Dr. Lewers thought, contrary to the opinion expressed by Dr. W. Duncan, that it was necessary to bring forward a

series of cases in which vaginal hysterectomy had been adopted on account of the disease being more advanced than in the series treated by the supra-vaginal amputation. Obviously, if vaginal hysterectomy instead had been performed in the six cases of supra-vaginal amputation which Dr. Lewers brought forward on this occasion, the patients would equally have remained without recurrence; but it would clearly be an error, had that been done, to bring them forward as showing the superiority of vaginal hysterectomy over the supra-vaginal amputation.

Dr. Lewers wished to emphasise the fact that the supra-vaginal amputation—that is the removal of the whole cervix at the level of the internal os, or even a little above that point—was an operation that only dated from about the year 1880. Previous to that date operators had merely removed the vaginal portion, or only a very little more. Statistics of amputations of the cervix for cancer here prior to that date were therefore of no value, since the operation was not the supra-vaginal amputation.

Dr. Playfair said that Dr. Lewers' case could have been easily capped by him in past years when he knew no better, and was in the habit of performing supra-vaginal amputations. Many of his cases had lived for years, one for seven, but eventually there had always been recurrence. It is obvious that the opinion of no one man, however extensive, could settle such a question as this. It was a question which must be determined by the results of hundreds of cases, not by those of tens or units. He based his objections to supra-vaginal amputations, not on his own or any other man's limited experience, but on broad general surgical principles which could not be contravened. Dr. Lewers admitted that the risk of the two operations was pretty much the same. If that is so, then why should we apply to the uterus a principle of operation which we should never dream of applying to the mamma or any other organ of the body? It should be remembered that total extirpation *per vaginam* was an operation practically still in its infancy, the technique of which was daily improving, and even now the results were most striking and satisfactory.

CASE OF FŒTAL DEFORMITY.

Shown by A. W. Addinsell, M.B.

Dr. Addinsell drew attention to the difficulty of diagnosis of presentation at the time of labour, and gave a description of the fœtus in its present condition, and arranged to have it injected and dissected with special reference to the circulatory system. There was marked flattening laterally of the whole skull, almost entire absence of the inferior maxilla, no external ear, no auditory meatus, considerable œdema of the entire integument, especially over the arms; the humerus was greatly disproportionate in length to the ulna and radius, which were flexed and ankylosed at the elbow-joint and very ill-developed, the left hand being fixed and adducted to the lower arm and possessing four fingers—two very small, webbed on the radial side; the third hypertrophied, the fourth apparently normal. The right hand had only two fingers, one very large and broad, the other small.

The penis was very rudimentary, apparent hypospadias, and the testicles had not descended.

The legs were flexed upon the thighs and ankylosed at the knee-joint, and so rotated that the soles were in apposition. The bones of the legs are altogether indistinguishable without dissection.

The right foot has two toes, and is covered by a sac of loose integument, and is flattened antero-posteriorly. The left foot has three toes.

There was no history of deformity on either of the parents' side; no history of maternal impression. Considerable diminution of liquor amnii.

The parents are first cousins, and this is the second seven months' fœtus which the mother has miscarried.

Mr. Alban Doran hoped that the specimen would be dissected. The lower jaw was probably deficient (Agnathus). The Society would be interested in hearing a more complete report of the case.

ON THE DEVELOPMENT AND NORMAL STRUCTURE OF THE HUMAN PLACENTA.

By T. W. Eden, M.D., M.R.C.P.

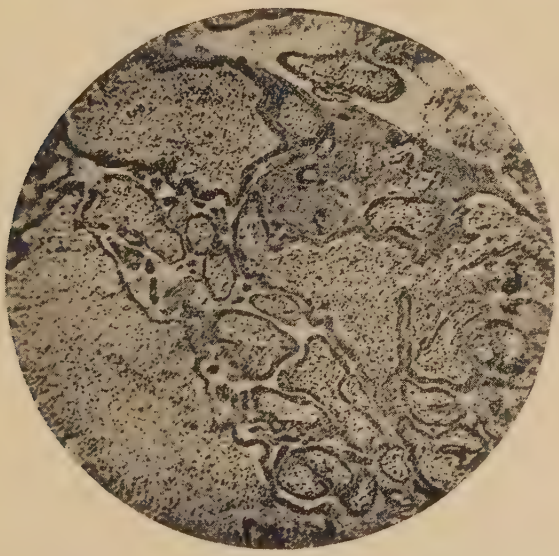
Dr. Eden read a short abstract of a communication about to be published in the 'Journal of Pathology and Bacteriology,' 1895. He said the placenta consisted of two distinct series of structures, one developed from the ovum —the fœtal placenta ; the other developed from the uterus —the maternal placenta. The *fœtal placenta* was developed from the external fœtal envelope or chorion. At the end of the second week the chorion was covered with villi, the reflexa had closed over the ovum, and the tips of the villi were loosely embedded in it. The fœtal and maternal vessels were thus brought into close relations, and the general arrangement represented a simple type of diffused placenta. The development of the discoidal placenta merely consisted in the specialisation of a part of the chorion. The placental chorion consisted of three sets of structures ; (1) a covering of epithelium, (2) a connective-tissue stroma, (3) blood-vessels. The chorionic epithelium consisted of two layers. The superficial layer, or trophoblast, represented the fœtal epiblast, and was the more important of the two. By a process of proliferation buds were formed from the trophoblast, which developed into new villi, and the steps of the process were described. The stroma consisted of a delicate reticulum of branching connective-tissue corpuscles, with numerous leucocytes. The meshes of the stroma formed a system of lymphatic channels, which were in free communication with the capillaries. The vessels of the villi were very large and numerous, and ran for the most part immediately beneath

the epithelium; this was an arrangement favourable to osmosis. By artificial injections, the lymphatic system of the stroma could be injected from the capillaries. In uninjected placentæ, blood was also often found in the stroma, so that the villi appeared to be soaked with blood like a sponge. The *maternal placenta* was developed from the uterine mucosa. The earliest changes were a continuation of those found in menstruation, for the fertilised ovum was engrafted upon the mucosa in its active phase. The development of the decidua consisted of three stages. In the *first stage* extensive hæmorrhages occurred into the decidua, and decidual cells were formed in large numbers from the connective-tissue corpuscles. These changes were preparatory, and could be found in all parts of the decidua during the first month. In the *second stage* the chorionic villi invaded the serotina, and the maternal vessels were opened up, thus establishing a circulation through the intervillous spaces. The invasion of the serotina appeared to be the result of the great activity of the trophoblast layer, and the steps of the process were described. The decidual cells also showed great activity in the absorption of blood effused into the serotina. Large lacunæ were formed by opening up of neighbouring vascular and glandular channels. The changes characteristic of this stage were found at the growing margin of the placenta up to the last weeks of gestation. The *third stage* represented the adult phase of the serotina. All active processes had then ceased, and the serotina had undergone some amount of consolidation and repair. The course of the maternal vessels through the serotina and their openings into the intervillous spaces were described in detail. The intervillous spaces were, according to the writer, made up (1) of the space existing primarily between the decidua and the chorion; (2) of spaces formed by destruction of decidual tissue; (3) of glandular and vascular channels opened up in the same way. The circulation through the intervillous spaces was not rapid, the outflow being chiefly

promoted by the intermittent contractions of the uterus. The giant-cells so often described in the serotina were really embedded trophoblastic buds. The fœtal and maternal structures of the placenta were firmly bound together by the attachment of numerous villi to the serotina. The changes occurring at the site of attachment were described. Owing to this firm union, separation of the placenta during labour occurred, not between the fœtal and maternal structures, but through the loose cavernous layer of the serotina.

[The paper was illustrated with a large number of lantern slides and microscopic sections.]

Mr. Alban Doran, at the conclusion of Dr. Eden's demonstrations, exhibited by limelight a photo-micrograph



Placental polypus (Mus. R. C. S., Pathol. Ser., No. 4659), microscopic section (Beck, ½ inch) showing placental tissue.

of a section of placental polypus. The villi showed very plainly, though the section was taken from a museum

specimen which had been in the usual weak solution of methylated spirit since 1877. Mr. Doran desired to know if any Fellow of the Society had ever seen a case of malignant disease of the uterus originating in retention of a piece of placenta. The disease had been repeatedly described by continental authorities, and some (Klien, 'Archiv f. Gynäkologie,' vol. xlvii, 1894) had detected deposits even as far as the lungs. These secondary deposits showed very characteristic villi, just as in the specimen now exhibited. More would be said on the whole question in a coming communication (see p. 232).

The adjourned discussion on Dr. Eden's communication will be found on p. 227.

JULY 3RD, 1895.

F. H. CHAMPNEYS, M.A., M.D., President, in the Chair.

Present—40 Fellows and 2 visitors.

Books were presented by Dr. Treub, La Société des Sciences Médicales de Lyon, New York Academy of Medicine, Dr. Balls-Headley, Professor Martin, and Dr. Braxton Hicks.

The following gentlemen were elected Fellows of the Society :—Alfred Charles Coles, M.D., C.M.Edin. (Bournemouth) ; Ernest Cross, M.R.C.S. ; George Horatio Jones, L.S.A. (Deddington) ; John Martin Munro Kerr, M.B., C.M.Glas. (Glasgow) ; James Newstead, M.R.C.S. (Clifton) ; R. C. Priestley, M.A., M.B.Cantab. ; Alfred William Robson, L.R.C.P.Edin. (Birmingham).

Frederick Ashton Warner, M.R.C.S., was proposed for election.

ACARDIACUS MYLACEPHALUS.

Shown by ALBAN DORAN (for Dr. WALTER LOWE and Mr. HARVEY BRADBURY).

MR. BRADBURY, of Burton-on-Trent, recently attended a primipara, aged 37, in labour at term. A small living male child was delivered first ; its vertex presented. The breech of the monster presented next. The placenta was healthy but small for a twin case. The cord of the

monster was inserted direct on the placenta, but close to the insertion of the cord of the autosite.

Mr. Doran examined and reported on the specimen as follows :

Acardiacus mylacephalus. The groove in the side of the vertex lies considerably to the right of the middle line. Photographed before dissection.

"Weight 2 lbs. 4 oz. Trunk well nourished, œdema of integuments universal but moderate. Large deformed legs. Length from vertex to unextended feet 9 inches.

Breadth at shoulders 5½ inches, at level of umbilicus 4½ inches. The uppermost part shows a hairy scalp of a limited area, chiefly lying in a groove 1½ inches long, which seems to indicate a sagittal suture. Below the anterior extremity of the groove is a fleshy three-lobed wattle, not half an inch long, with a flaccid pad of flesh nearly 1 inch in diameter to its left, and a smaller but similar pad to its right on a much lower level. Immediately below the wattle is a large tongue-like body 1¼ inches long. Under that body is a minute aperture, whence fluid rises when the trunk is pressed, the fluid coming from a blind, very rudimentary pharynx.

"Right upper extremity distinct, 2 inches long, a flat three-lobed piece of flesh externally and distinctly above its lower limit seems to represent the hand. The left upper extremity is represented by a minute nailed finger in a shallow pit one inch below the point of the shoulder.

"Umbilicus lies high up, 2½ inches above pubes. The cord contains one artery and one vein.

"Penis well developed, phimosis from œdema of tissues. Scrotum rudimentary, perineum well formed. Anus distinct, quite open, meconium escaping. No sign of a spina bifida.

"Lower extremities fairly developed above, and about 6 inches long. Right thigh thin, there being but little œdema. Femur fractured after birth, when specimen was pulled out of a jar. Left thigh shows characteristic 'trunk-hose' appearance usual in acardiacs, œdema being most marked above. Right leg very short, ending in a deformed foot, with only a single toe indicated externally. Left leg well developed, foot fairly formed, bearing three toes with indication of a fourth.

"*Dissection.*—The thoracic and abdominal walls are thick, as usual, from œdema. The abdominal cavity is vertically long (about 2 inches), but laterally and antero-posteriorly very narrow. The alimentary canal is represented by a moderately convoluted tube, running vertically downwards from a shallow and very incomplete septum,

evidently the diaphragm, to the anus. It was held back by a simple mesentery. The uppermost part is an almost S-shaped tube, blind at both ends; from its position it probably corresponds to the stomach. The remainder of the tube begins immediately below the upper portion in a blind extremity, but the anus and rectum are pervious, and air and spirit can be made to distend the tube, which is, of course, the intestinal canal. There was no trace of liver, yet meconium issued from the anus.

"The upper part of the sternum is complete, and rudimentary ribs can be detected.

"The heart and main arterial system is represented by a perfectly straight tube 3 inches in length, bifurcating above close to the rudimentary head, and ending below in the hypogastric arteries. There is no indication of any dilatation of this tube in the thorax, representing the heart."

I consider that this monster cannot be classed as an acardiacus paracephalus, since in that type the limbs are more developed, there is more trace of a head, and the heart is indicated by a distinct dilatation, sometimes showing traces of chambers. In the typical acardiacus acephalus, on the other hand, the lower extremities are relatively well developed, whilst there is absolutely no trace of a head,—in fact, the upper part of the body is usually wanting. This specimen is best classed as a mylacephalous acardiac, as it consists chiefly of trunk, with very ill-formed limbs and a distinct though rudimentary head.

Mr. Bradbury's specimen may be compared with Nos. 8 and 9 in the Teratological Series, Museum of the Royal College of Surgeons (New Catalogue, 1893), figured in my notes on Mr. Trestrail's specimen ('Trans. Obstet. Soc.,' vol. xxxi, 1889, fig. 5, and p. 18), but in that case the limbs and intestines are much less developed; whilst, on the other hand, it possesses a pharynx, œsophagus, stomach, a kidney, and persistent Wolffian bodies.

The present specimen may also be contrasted with the acardiacus paracephalus in St. George's Hospital Museum,

23A (ibid., fig. 7, and p. 24). The resemblance is striking, yet in the latter there is a faint indication of a heart in the form of a slight dilatation of the single main artery. The kidneys are present, the intestine is very short and rudimentary. By studying the three we see at once that the development of the viscera in any acardiac is very irregular. The College specimen (true mylacephalus), the lowest in general development, has the upper part of its alimentary canal well developed. The St. George's specimen, higher in external development than Mr. Bradbury's, has hardly a trace of intestine.

UTERUS WITH FIBROID TUMOURS AND CARCINOMA OF THE CERVIX REMOVED POST MORTEM FROM A PATIENT ON WHOM EIGHT YEARS PREVIOUSLY THE OPERATION OF OÖPHORECTOMY HAD BEEN PERFORMED.

Shown by G. F. Blacker, M.D.

The history of the case is as follows:—H. R— was admitted into University College Hospital May 31st, 1886. She was thirty-nine years of age, married, had had one child at the age of nineteen, and no miscarriages. She complained of a lump in the abdomen which she had noticed for the last six years. During the same length of time her periods had recurred every fortnight; the amount lost was considerable, and had markedly increased during the last few months. Previous to six years ago menstruation had occurred regularly, but had always been rather excessive. She also complained of a gnawing pain round the waist, of a frequent desire to pass water, and of some bearing-down pain during micturition.

On examination the abdomen was found to be promi-

nent up to the umbilicus; the latter was depressed. A smooth, hard, scarcely moveable tumour could be felt reaching from the pubes to the umbilicus. The tumour could not be raised out of the pelvis, nor could the hand be depressed between it and the symphysis pubis. It was not tender, and felt rather softer at the sides than in the centre.

On vaginal examination a round smooth tumour could be felt filling up the pelvis continuous with the tumour in the abdomen. The body of the uterus appeared to be lying to the left side of the pelvis, the sound passing into it for 5½ inches readily. As the hæmorrhage was excessive and prevented the patient from getting about, oöphorectomy was performed by Sir John Williams on June 10th. The patient had an uneventful recovery, and left the hospital on July 11th.

The following note was made of her condition when she returned to be seen in July, 1892, six years after the operation:—The patient is rather stout, not anæmic, face a little flushed; breasts large, a good deal of fat present in them; there is a small hernia through the upper part of the scar, some atrophy of the vulva. The cervix is far back and normal in size; in front of it a small tumour is to be felt like the body of the uterus; on passing a sound this is found to be a tumour in the anterior uterine wall; the sound passes for 2¾ inches.

The patient says that since the operation she has never menstruated, and that she has entirely lost all sexual desire and feeling, although previously they were well marked.

She did not return again until April 18th, 1894, when she came to the out-patient department with the following history. For the last eight weeks she had had almost continuous bleeding from the vagina, with the passage of clots at intervals and some pain in the left side. She had also lost flesh lately, and felt ill and weak. A hard round mass could be felt reaching up 2½ inches above the pubes. On vaginal examination the cervix was low down, scarcely moveable, and felt hard and nodular. The tissue

of the cervix broke down under the finger, and examination caused a good deal of bleeding. A diagnosis of carcinoma of the cervix was made, and the patient recommended to come into the hospital. A few days later she was admitted into a medical ward with a severe attack of bronchitis. She became rapidly prostrate, and fell into a semi-comatose condition, from which she could only be roused with great difficulty. There was no sickness or muscular twitchings. The temperature never rose above 99·2°, and was chiefly subnormal. No changes in the fundus could be detected by examination with the ophthalmoscope.

The urine had a specific gravity of 1008—1010, and contained a trace of albumen and 1 per cent. of urea. The amount per diem could not be estimated, as the patient passed it under her into the bed. She rapidly became worse, and died comatose on the eighth day after admission.

At the post-mortem examination the heart muscle was found to be pale, flabby, and fatty; the lungs were œdematous. On opening the abdomen an adhesion was found measuring 1½ inches by ¼ inch, stretching from the lower part of the ileum to the margin of the hernial aperture. The liver was pale and soft, the spleen normal. Both ureters were dilated at their upper ends to the size of the index finger. The lower end of the left ureter was distinctly narrowed where it passed under the layers of the left broad ligament; no narrowing of the right could be detected. The kidneys were of normal size, but the pelves were dilated, the mucous membrane of the pelvis thickened and opaque. The pyramids were atrophied, the kidney substance pale and tough, and the distinction between medulla and cortex almost wanting. The capsule stripped off fairly easily, but small parts of the kidney substance came away with it. The kidneys presented all the appearances of chronic interstitial nephritis.

The specimen consists of the uterus, a part of the bladder, the lower ends of the ureters, and the upper end of the vagina. Attached to the posterior part of the fundus uteri is a sessile subperitoneal fibroid tumour,

measuring $2\frac{1}{4} \times 1\frac{1}{2}$ inches. Embedded in the anterior uterine wall are two smaller fibroids completely calcified, the larger measuring $1\frac{1}{4}$ inches $\times$ 1 inch, the smaller 1 inch $\times$ $\frac{3}{4}$ of an inch. The cavity of the uterus, somewhat deformed by the presence of the fibroids, measures $3\frac{1}{2}$ inches from external os to fundus. The anterior lip of the cervix, for a distance of $1\frac{1}{2}$ inches, is occupied by a superficially ulcerated growth, which under the microscope showed the typical structure of a carcinoma. The growth does not appear to have spread beyond the tissue of the cervix.

On making sections of the remains of the broad ligaments, no trace, on naked-eye examination, could be found of the silk ligatures used at the operation.

ACUTE SUPPURATION AND SLOUGHING OF OVARIES AFTER PARTURITION.

Shown by J. H. Targett.

History of case.—The patient was an unmarried girl, aged 18, who died four days after delivery at full term. There had been pyrexia for a few days prior to delivery. The autopsy revealed suppurative peritonitis in the pelvic cavity, which seemed to have been set up by the rupture of an abscess in the right ovary.

Examination of the pelvic viscera.—The uterus was opened in front, and its inner surface was found to be sloughy, especially where the placenta had been attached on the posterior wall near the fundus uteri. On either side of the body of the uterus the subserous tissue was infiltrated with pus, and this condition extended laterally into the broad ligaments and downwards to the base of the bladder. The cervix uteri and upper portion of the

vagina showed the signs of recent parturition, but were not otherwise abnormal. Bladder healthy. The Fallopian tubes contained no pus, and they were in all respects free from disease; the abdominal and accessory ostia were patent, the fimbriæ unthickened, and there were no adhesions about the broad ligaments, or other signs of past inflammation.

The right ovary was replaced by a large spongy mass of sloughing tissue, in which the normal structure of the viscus was not to be recognised. The serous coat on both surfaces of the ovary had disappeared, or was represented by a few small shreds. On section the substance of the organ was infiltrated with pus, and many small abscesses had formed in the tissues. One of these, larger than the rest, had burst externally into the peritoneal cavity. The left ovary was smaller, and was almost detached from the broad ligament by the process of sloughing, so that its substance hung in shreds with no covering of germinal epithelium.

The broad ligament on either side between the uterus and ovary was markedly thickened by purulent infiltration of the connective tissue, and was in strong contrast with the condition of the part intervening between the ovary and Fallopian tube, which was translucent and did not exceed the normal thickness. The specimen, which when dissected was free from foul odour, demonstrates the occurrence of an acute inflammation and suppuration of the ovary by direct extension from a septic parametritis of puerperal origin, and is of interest as showing the severity of the lesion in the ovaries, while the Fallopian tubes remain unaffected. In another preparation recently examined a similar condition of the ovaries and tubes existed, and in this instance the suppuration in the cellular tissue was set up by a perforation of the wall of the bladder by a foreign body.

EPIDERMIC CASTS FROM THE VAGINA.

Shown by J. H. Targett.

The preparation here described was sent to me by Dr. Mark Jackson of Barnstaple, and I am indebted to him for the clinical notes of the case, and for kind permission to exhibit the specimen, which is preserved in the Museum of the Royal College of Surgeons.

History of case.—The patient was a single woman, aged 35, who had suffered from vague ill-defined pains in the pelvic region, and, according to her statement, from menorrhagia. She was well built, of fresh ruddy complexion, and the picture of health, though formerly she had suffered from insomnia and dyspepsia. On consulting an eminent specialist in London, he reported that there was nothing the matter with her. The uterus was anteverted, but not more so than would be normal in many women. The case seemed to him entirely neurotic. In May, 1894, acting upon the advice of a friend, the patient began a course of local treatment by a quack remedy. This consisted in the introduction into the vagina of some medicament in the form of a cylinder, the directions for treatment being as follows:—To lie on the back upon the floor just before getting into bed, to draw the feet well up, and to insert the cylinder (after removing the tinfoil covering) into the vagina as far as possible. After an interval of three to five days a membranous substance was discharged by the use of a douche of soap and water. Another cylinder was then introduced and the process was repeated. In this manner, during a period of about ten months, no less than fifty of such vaginal casts were expelled with remarkable regularity. The only direct benefit of this treatment acknowledged by the patient was that the menstrual period, which formerly

lasted five or six days, was now reduced to two or three days.

Description of preparation.—The two casts exhibited are tubular and somewhat funnel-shaped, the smaller end corresponding with the vulval orifice of the tube. They are nearly perfect in outline, and form an exact mould of the vagina. The extreme length of the cast is three inches; the anterior surface is distinctly concave, while posteriorly the surface is convex, and is marked by a longitudinal ridge situated in the middle line of the specimen. The exterior presents a series of transverse ridges which correspond with the rugæ of the vagina, and is finely dotted with minute depressions produced by the apices of the papillæ of the mucous membrane. Histologically the cast consists entirely of the epidermis. When recently detached a little blood was adherent to the outer surface.

SKULL OF AN ANENCEPHALIC FŒTUS.

Shown by Amand Routh, M.D.

In vol. xxxv, for 1893, of the 'Obstetrical Transactions,' p. 294, is the report of a committee, consisting of Drs. Routh, Giles, and Spencer, on a specimen of anencephalic fœtus shown by Dr. Routh.

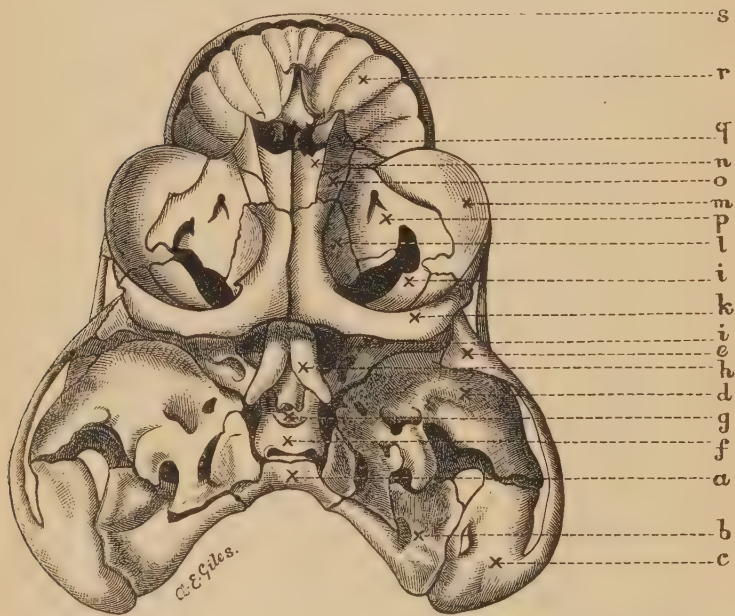
The skull of this fœtus has since been macerated, and the following is the account of this interesting specimen.

The vault of the skull is absent, and the remaining portions have become posteriorly separated and laterally everted.

The parietals are totally deficient, as is the greater portion of the frontals; but the orbital plates of these bones are present, as is generally the case. The upper half of the occipital bone is absent; the lower half of its

squamous portion is present, but the two pieces of which it is composed are found widely separated, forming the outer and posterior portion of the skull. They articulate with the exoccipitals and with the temporal bone. Each of these pieces consists of two parts,—an inner, somewhat quadrilateral, which is thick and articulates with the petro-mastoid division of the temporal; and an outer

FIG. 1.



a. Basi-occipital.
b. Ex-occipital.
c. Lower portion of squamo-occipital.
d. Petro-mastoid portion of temporal.
e. Squamo-zygomatic do. do.
f. Basi-sphenoid.
g. Sella turcica.
h. Lesser wing of sphenoid.
i. Greater wing of sphenoid.
k. Orbital plate of frontal.
l. Lateral mass of ethmoid (orbital surface).
m. Malar.
n. Nasal.
o. Lachrymal.
p. Orbital plate of superior maxillary.
q. Nasal process of superior maxillary.
r. Alveolar process of superior maxillary.
s. Inferior maxillary.

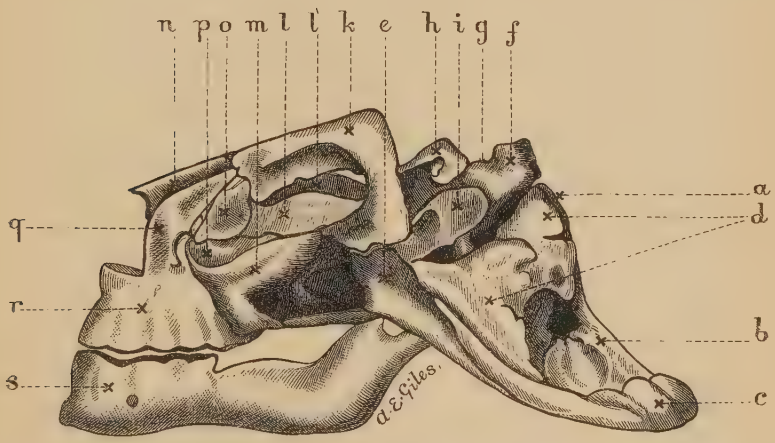
slender process, which runs forward to join the squamo-zygomatic division of the same bone. The basi-occipital

is large, and has the usual relations. The exoccipitals diverge widely, so as to leave the foramen magnum incomplete.

The tympanal portion of the temporal bone forms a complete ring round the external auditory meatus. The auditory ossicles are complete on the right side; the stapes is present on the left, the incus and malleus having separated during maceration.

The sphenoid bone has nothing unusual except the

Fig. 2.



l'. Cribriform plate of ethmoid. Other references as in Fig. 1.

form of the lesser wings. These are united anteriorly and diverge posteriorly.

The pre-maxilla is fused with the maxilla. All the other bones of the skull are fairly normal, and do not call for detailed description.

The two figures accompanying this account show the characteristic features of the skull. They are lettered uniformly.

The point of principal interest is the nature of the absent parts of the skull. It is generally held that the bones developed from membrane are the ones to disappear,

and this is in the main borne out by the specimen. The membrane bones are the frontal, parietal, the squamous portion of the temporal, and part of the squamous portion of the occipital. The orbital plates of the frontal have escaped in this instance, as have also the lower half of the squamous portions of the temporals. All the rest have disappeared, whilst not a single portion of bone developed from cartilage is wanting.

One word about the occipital bone. This is developed usually from seven centres, one for the basi-occipital, one for each exoccipital, and four for the vertical or squamous plate. Of these four, the two lower are formed in cartilage; they are present in the specimen. The two upper are developed in membrane; they have disappeared.

Thus the general principle is borne out that the membrane bones are the ones that are absent in the anencephalic skull.

AMAND ROUTH.
ARTHUR E. GILES.

PEDUNCULATED FIBRO-MYOMA OF THE BROAD LIGAMENT, WITH TWISTED PEDICLE.

Shown by CHARLES J. CULLINGWORTH, M.D.

DR. CULLINGWORTH exhibited a pedunculated fibromyoma of the right broad ligament, which he had removed a month previously by abdominal section from a woman, aged fifty-one, who had ceased to menstruate three years ago. There had been some enlargement of the abdomen for eight years, and five years ago there was discovered a definite swelling about the size of a cricket-ball on the right side. The patient had suffered occasionally from paroxysmal attacks of pain, which had

lately been more frequent. Last Easter (April, 1895) there occurred a sudden and severe attack of abdominal pain whilst the patient was shopping. She was confined to bed for a week, and then recovered sufficiently to go about, but at the end of a fortnight she had a second attack of pain of equal severity with the former one, and had been in bed from that time up to the time of her admission to the hospital, *i. e.* for a fortnight.

On admission there was found to be a large, non-fluctuating, soft, well-defined tumour extending from the pubes to the costal margins. The uterus, of normal length, was found lying behind and below the tumour, and was moveable independently of it. The tumour was thought to be ovarian.

On opening the abdomen the tumour was found to be attached by a short, narrow pedicle to the posterior surface of the right broad ligament, half an inch to the inner side of the ovary. It was not connected either with the uterus, the ovarian ligament, the round ligament, or the Fallopian tube. Its pedicle was twisted one and a half times. Its outer surface was inflamed, and it had contracted extensive recent adhesions to omentum and intestine. The tumour was removed along with the adjacent ovary.

The weight of the tumour was 7 lbs. 5 oz. Its circumference measured 25 inches. Its diameters were $8\frac{1}{2}$, $7\frac{1}{2}$, and $6\frac{3}{4}$ inches respectively. Its external surface was smooth and uniform. On section it was seen to be of homogeneous structure and highly œdematous. Microscopically it proved to be a fibro-myoma.

The uterus and its appendages on both sides were healthy.

The patient's recovery had been uneventful, the temperature never having exceeded 100° F.

TUBAL ABORTION.

Shown by W. S. Playfair, M.D.

Dr. Playfair exhibited a specimen of tubal abortion, which presented many of the characters of what has been called tubo-ovarian gestation. It was taken from a young woman twenty-five years of age, who had been married for five months. She had missed her last two periods, and during that time had suffered from paroxysms of intense pelvic pain in the left ovarian region, steadily increasing in severity and frequency.

On vaginal examination a tumour the size and shape of a small lemon was distinctly made out in her left broad ligament, both by the vagina and rectum. The diagnosis of a tubular fœtation was arrived at and laparotomy advised.

On opening the abdomen, what was at first supposed to be the distended tube was removed, which ruptured as it was being extracted, discharging some old blood-clots, which were unfortunately thrown away, so that the existence of ovular structures in them could not be proved.

On examination the tube and its fimbriated extremity, much thickened and dilated, formed the roof of the sac. One of its walls was the ovary, and the remainder was adventitious inflammatory matter, forming a cyst containing a quantity of blood-clots.

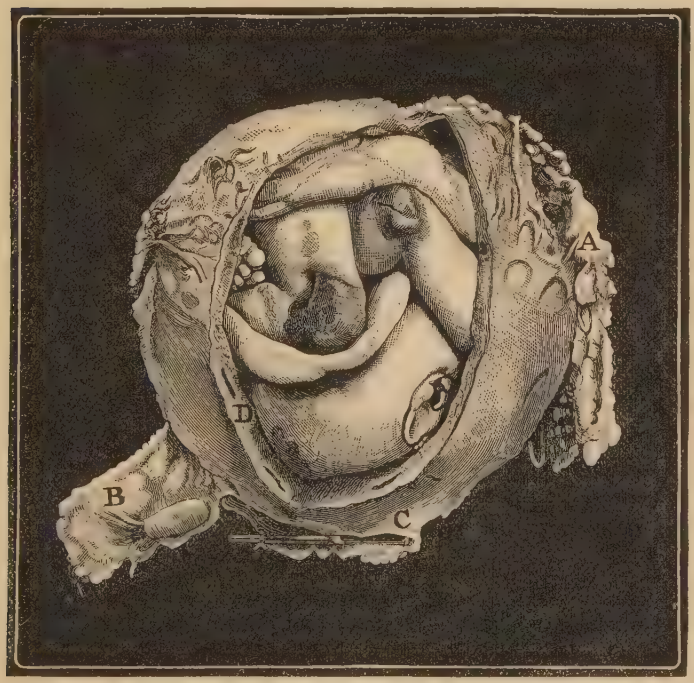
The specimen was kindly examined by Mr. Bland Sutton, who came to the conclusion that the fimbriated extremity of the tube had originally been adherent to the ovary. Subsequently the impregnated ovum had been arrested in the tube, where its original site of attachment could plainly be made out. Then followed a tubal abortion, the ovum being discharged in a backward direction through the patulous opening of the fimbriated extremity, and subsequently encapsuled as found on operation.

The patient made an excellent recovery, and her pains never recurred.

FŒTATION IN A RUDIMENTARY HORN OF UTERUS.

Shown by A. L. Galabin, M.D.

Dr. Galabin showed a specimen of fœtation in a rudimentary and impervious uterine horn removed by abdominal section three months after full term. It was from



A. Great omentnm adherent to uterus.
B. Broad ligament with ovary.
C. Pedicle.
D. Placenta.

an operation performed more than three years ago, and he was induced to show it now since it had been stated at a recent meeting of the Society that most recorded cases of the kind had ended fatally.

The patient was twenty-five years old, and this pregnancy occurred immediately on her marriage. At four months' pregnancy she suffered from an illness described as "congestion of the liver," in which she vomited blood. She was ill for six weeks and in bed three weeks. At the end of nine months she had some pains, not leading to delivery, but had no sanguineous discharge till two months later, when she had one lasting only one day. A month after this she had apparently a normal period.

Diagnosis was rather difficult, as the tumour was globular with some fluctuation and fluid thrill resembling that of an ovarian tumour, and no part of the fœtus could be made out. The sound passed to the normal length, showing the uterus to be behind the tumour.

On abdominal section the tumour had the appearance of a uterine tumour, but was extensively adherent, mainly to omentum, but also to intestines. After separation of adhesions the appendages of left side were felt attached to it low down, and deep down in the pelvis was felt a uterus unicornis dexter, with the appendages of right side. It was decided to make a long incision and remove the tumour unopened. It was found possible to make a broad pedicle and tie it like that of an ovarian tumour. There appeared to be little or no uterine tissue uniting the sac to the uterus unicornis, and the pedicle was found quite impervious on separation.

A drainage-tube was kept in for four days, and the patient made a good recovery. Two years later she had a natural confinement following a normal pregnancy.

The specimen showed the fœtus lying much doubled up in a thick-walled sac, the head pressed into the abdomen, and the shoulder lying lowest.

IMPROVED SANITARY TOWELS.

Shown by A. L. Galabin, M.D.

Dr. Galabin showed two recent improvements introduced by Messrs. Southall in connection with the well-known sanitary towels. One was the addition of a narrower internal fold, continuous with the main mass of the towel, which rendered it more absorbent. The other was the addition of a cremator for the towels. The towel was placed in a wire cage within a cylinder, and with the aid of from one to two tablespoonfuls of spirit it was destroyed, with little or no smoke. This would be especially valuable for travellers in foreign hotels where the rooms had no fireplaces.

ADJOURNED DISCUSSION ON THE DEVELOPMENT AND NORMAL STRUCTURE OF THE HUMAN PLACENTA (*see* p. 205).

Dr. Dakin asked Dr. Eden how the specimens of placentæ and deciduæ from which the sections were made had been obtained and prepared, so as to exclude the possibility of the hæmorrhages into the decidua in the earlier stages being artificially produced. It was highly probable that the hæmorrhages were normal, for the process thus resembled that of the formation of the menstrual decidua, which was another example of intense activity of function. The resemblance was interesting as bearing on the connection of ovulation with menstruation. Hæmorrhages as part of an early stage in the formation of the placenta were known from the observations of Hubrecht and others to take place in the trophoblast of some of the lower animals, where cleavage occurred in this part of the chorion, and produced spaces which became filled with maternal blood. Dr. Eden had said that what had been described as multinucleated cells by many observers were practically always

sections of buds of the chorionic villi lying in the intervillous spaces. These cells had, however, been demonstrated in the sinuses of the uterine wall, and more deeply than the villi were likely to penetrate, and had been described by Helme * as collecting around the vessels in the uterine wall towards the end of pregnancy in connection with the hyaline degeneration of the sinus-epithelium which took place then. This change had been first described by Friedländer, and there was an account of it by John Williams in the Society's 'Transactions' (vol. xx, p. 172).

Dr. Galabin said that there was one point in the paper in which he found it difficult to follow the author's argument. He understood that Dr. Eden described the maternal blood space of the placenta as formed by extravasation of blood through rupture of the maternal vessels into the intervillous space. It would thus lie outside the decidua serotina; but initially the intervillous space would be continuous all round the chorion. He did not understand how it was on this theory that the extravasated blood was limited to the placental site. According to the older theory, that the maternal vessels became enormously dilated as they grew up into the intervillous space before the villi broke through into their cavity, one could understand that the maternal blood space would be bounded by a limiting layer of the decidua serotina, because it would then lie inside the decidua serotina and not outside. Again, could the author explain why, if the blood were extravasated, it did not coagulate normally, and why, in abnormal conditions, it did coagulate, as when an apoplectic ovum was formed?

Dr. Eden, in reply, thanked the Society for giving him the opportunity of submitting this demonstration. He believed that the specimens of early ova shown at the last meeting might be fairly regarded as healthy; they were examples of abortion occurring from accidental causes, not from intra-uterine disease. In reply to Dr. Galabin he said that the maternal vessels became to a great extent opened up by the destructive action of the trophoblastic buds, and this process was the principal factor in the development of the circulation through the intervillous spaces. Similar changes had been described in the development of the placenta of many other animals beside man. The questions of fibrinous and calcareous degeneration in the placenta he hoped to deal with in a subsequent paper.

* 'Trans. Roy. Soc. Edin.,' vol. xxxv, pt. 2.

PLACENTAL POLYPUS.

By Alban Doran, F.R.C.S.,
SURGEON TO THE SAMARITAN FREE HOSPITAL.

(Received May 21st, 1895.)

(*Abstract.*)

The author, in examining the clots from tubes which he has recently removed in cases of suspected tubal gestation, compared the clots with sections of true placenta, and of retained placental fragments. He also examined, for the second time, sections from a polypoid growth found in the uterus of a woman aged twenty-nine, who died many years ago after the removal of a cystic kidney by Sir Spencer Wells. There had been no hæmorrhages; in fact, the patient believed that she was pregnant on account of the absence, for several months, of menstruation. The uterus, with the polypus attached to its wall, and the ovaries showing a large corpus luteum on one side, are preserved in the Museum of the College of Surgeons (No. 4659, Pathological Series). In 1877 Mr. Doran believed that the polypus was a cavernous angioma. Dr. Boldt has, it must be noted, quite recently detected a tumour of that kind in the uterus. The College specimen, however, proved on careful examination to be made up of placental tissue. It is a true placental polypus. In all other recorded cases uterine hæmorrhage was present. The author dwells on recent opinions concerning placental polypus. According to the recent researches of Klasson of Kieff, and Lejars and Lévi of Paris, the so-called "fibrinous polypus" is only a form of placental polypus, if not identical, the placental tissue having been overlooked. The author finally refers to Hartmann and Toupet's important investigations on the results of retention of placental tissue when, instead of septic changes, organisation occurs. They find that this tissue may develop into innocent deciduoma (that is, placental polypus),

hydatidiform mole, and chorion-celled sarcoma. This last growth is the "malignant deciduoma," or cancer following gestation, which has been so frequently described of late, on indisputable evidence, by Continental authorities. Mr. Doran asks why, if this grave disease be so frequent in Europe, it has hitherto escaped the notice of British teachers and practitioners.

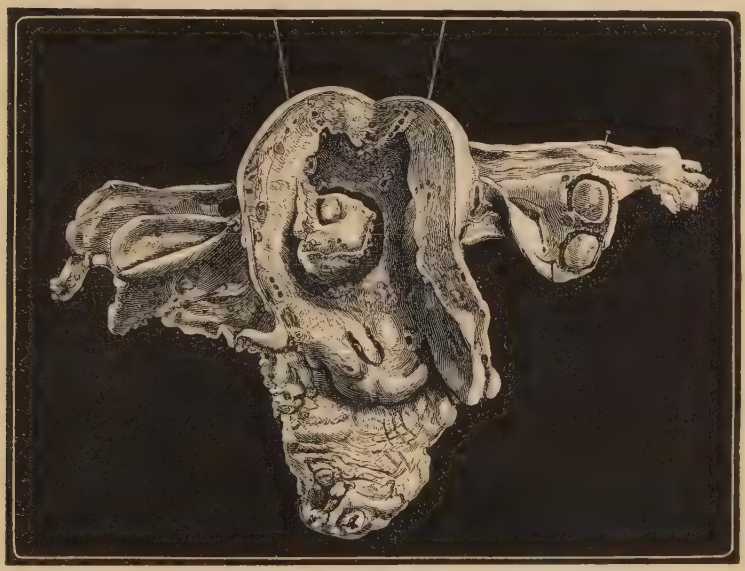
I HAVE recently operated upon a considerable number of patients where tubal pregnancy was either evident or strongly suspected. I have carefully submitted the diseased tubes and coagula to microscopic examination, in order to search for chorionic villi and placental tissue. When pursuing these investigations I inspected sections of clot from cases where a fœtus was found, and sections of the placental tissue. In the course of this undertaking my thoughts turned to a remarkable specimen which I prepared as long ago as 1877; it is now preserved in the Pathological Collection, No. 4659,* Museum of the Royal College of Surgeons, and I exhibit it this evening. I believe the growth, which occupies part of the interior of the uterus, to be a placental polypus, though I misinterpreted its nature in 1877, when I had little special experience of the pathology of the female organs.

The clinical history is as follows:—M. R—, aged 29, was admitted into the Samaritan Free Hospital in October, 1877. A large fluctuating tumour distended the abdomen and was diagnosed as an ovarian cyst. She had been several times pregnant, and aborted very frequently. She believed, when admitted, that she was pregnant. There were no symptoms of disease of the urinary organs.

On October 31st, 1877, Sir Spencer Wells operated. The tumour proved to be a left hydronephrosis, containing

* In the Catalogue the words "From the same case as the large cystic kidney, No. 3557," convey a wrong impression; the kidney so numbered was removed ten years earlier from another patient. The clinical note to 4659 and the reference appended to it are, on the other hand, correct (see 'Descriptive Catalogue of the Pathological Specimens contained in the Museum of the Royal College of Surgeons of England,' 2nd edit., vol. iv, 1885).

six to eight pints of a fluid resembling urine. The uterus rose above the pubes, and appeared as though it contained a fœtus. The patient died of septicæmia on November 4th.



Pedunculated placental polypus occupying part of the cavity of the uterus. The right ovary contains a large corpus luteum of pregnancy (Museum R.C.S., Pathol. Ser., No. 4659). The morbid growth, which had been cut open in order to procure sections for the microscope, has been placed so as to assume its original appearance.

In those days I made post-mortem examinations on patients who died in the Samaritan Hospital. I was begged, in this case, to be very careful in opening the uterus. I found the right kidney and ureter both dilated. There was pus in the peritoneum. The right ovary contained a well-formed corpus luteum of about the third month (I compared it with Dalton's well-known drawings). The uterus was of the size usual at the end of the third month of pregnancy. On opening it I found no fœtus. A soft and vascular tumour of the size of a filbert was

attached by a broad and fairly distinct peduncle to the left side of the uterine wall close to the cornu. The peduncle appeared entirely composed of uterine muscular tissue. It seemed to me at the time that the mucous membrane of the uterus was reflected over the tumour, and between them were two or three old and recent clots.

The reflection of mucous membrane was a false appearance; the clots were an important feature to which further reference will be made. On microscopical examination the growth seemed to be composed of small round cells in a very scanty stroma, "with numerous blood-vessels." I regret to say that I described the appearances in the words just quoted in the Pathological Catalogue. I drew a sketch of the section, and I now see that two large U-shaped chorionic villi in the sketch preserved in the College were, perhaps naturally, mistaken by me for coils of vessels. The microscopic photograph which I exhibited by limelight at the June meeting (p. 207) was prepared for me by Mr. Edmund Roughton and Mr. C. Cosens, who also made the print of the same section which I now present for inspection. The appearances which it faithfully represents should be borne in mind, for in cases of the disease known as malignant deciduoma, of which something will presently be said, precisely similar tissue has been detected in metastatic deposits, even in the lungs.

I had recently seen cases of cavernous angioma in St. Bartholomew's and King's College Hospitals, and I thought that this specimen might be a tumour of that class. In editing the 'Pathological Catalogue' Sir James Paget, Dr. Goodhart, and myself, however, objected to hide behind big names when we were uncertain of the nature of any specimen in the collection. Strange to say, I find that in Keating and Coe's 'Clinical Gynæcology, Medical and Surgical, by American Teachers,' published only last month, Dr. Boldt describes and figures a case of cavernous angioma of the uterus. The patient was a nullipara aged thirty-seven. She had suffered for

nearly a year from profuse uterine hæmorrhages, and, as the curette and other treatment had failed to do good, the uterus was removed. A tumour, as big as a walnut, was found in the anterior and upper part of the uterus. It was sessile, and protruded into the uterine cavity, also extending halfway through the thickness of the wall. It was deep red and firmer than the surrounding tissue. On careful microscopical examination Dr. Boldt discovered the characteristic appearances of cavernous angioma.

Had Dr. Boldt's case occurred before 1877 I might have been further misled. For several years I have suspected that my first interpretation of the case was incorrect. Mr. Targett has very carefully prepared some fine sections of this pedunculated growth. I exhibit a section this evening. This time my opinion, or rather suspicion, proved correct. Mr. Targett writes, "The polypus is composed of typical placental tissue and nothing more, as far as I can see."

The growth must be classed as a placental polypus. Much has been written on this subject. Dr. Klasson,* of Kieff, Russia, compiled an important summary of opinions on placental polypus six years ago. Fibrinous and placental polypi were considered, as well as growths derived from the decidua and the chorion.

Fibrinous polypi have often been described. They are closely related to placental polypus. According to Klasson's definition, they are formed out of clots which accumulate on the thrombus which obliterates the uterine sinuses after delivery or earlier. These thrombi project, after expulsion of the fœtus and placenta, into the uterine cavity, persisting sometimes, it is said, for several months. If so they afford time enough for other changes. But Cohnstein and Charpentier, as Klasson observes, have already pointed out that the clot in a "fibrinous polypus" may have been originally deposited on a piece of decidua or placenta. Matthews Duncan, long before the two

* "Contribution à l'étude des faux polypes de l'utérus," 'Annales de Gynécologie et d'Obstétrique,' vol. xxxi, 1889, p. 105.

authorities just named, wrote: * "A fibrinous polypus is a false polypus. It occurs after delivery or abortion, is of considerable size, as of an egg, is generally lying in the cervix and broadly attached to the placental site by a thick neck, scarcely a stalk. At its attachment chorionic structures in small quantity are generally found, and the mass of the polypus is formed of blood. This polypus is firm enough to retain its shape when removed by avulsion. On examination its outer surface is formed of a thick yellow fibrinous layer, and inside is a dark, firm blood-clot. It behaves and is treated as a polypus, and is not very rare."

Let it be remembered that the same great authority, our late President, writes just before the above quotation, "A bit of placenta, partially adherent, hanging by a stalk, is called a placental polypus."

Thus Matthews Duncan admitted the existence of placental polypus, and also believed in "fibrinous polypus." He, however, brings forward no evidence based on microscopical research. In the specimen which I exhibit it must be remembered that when it was fresh, and I was quite unprejudiced about distinctions between placental and fibrinous polypi, I noted that there were old and recent clots on the surface of the polypoid growth. That which I described as "the mucous membrane of the uterus reflected over the tumour" was simply a layer of organised clot.

Returning to Klasson, I find that the difference between a fibrinous polypus and a placental polypus is but a matter of degree when the growth is simply clot deposited on a piece of adherent placenta. If the pedicle alone be composed of placental tissue the growth is a fibrinous polypus, whilst Klasson would rightly term it a placental polypus if "the bulk of the polypoid growth be formed of placental tissue covered superficially with a layer of fibrin." This latter condition was to be seen in my specimen when it was fresh.

* 'Clinical Lectures on the Diseases of Women,' 3rd edit., 1886, p. 199.

Quite recently, however, two French writers, Lejars and Lévi,* on examining a so-called fibrinous polypus, have come to the conclusion that the term should be abolished. They believe that all so-called "fibrinous" are placental polypi. Their patient was thirty-seven. She had a fall on September 10th, 1893, when four months pregnant, and aborted. The period did not reappear. Early in January, 1894, a fœtid red discharge was observed; it was followed by menorrhagia for a month. The cervix was thick, irregular, and hard. It bled on the least touch, and the blood seemed fœtid. The uterus was moveable, but there was deposit in the fornices. The patient was emaciated.

Cancer was therefore suspected, and on February 3rd, 1894, the uterus was removed by vaginal hysterectomy. On opening that organ, a polypus one inch long was found springing from the inner wall posteriorly, close to the left cornu. It looked like a piece of fibrin. MM. Lejars and Lévi examined sections under the microscope. The tissue was found to be "purely and clearly placental;" —this is the same report as Mr. Targett made of sections from my specimen. These investigators dwell, after the report, on the fact that the microscope has not hitherto been sufficiently used. The so-called fibrinous polypus is not, as Kiwisch made out, a degeneration of the uterine wall; nor is it, as Scanzoni maintained, a change in the entire ovum analogous to a mole. It is, Lejars and Lévi insist, simply a form of placental polypus.

Klasson discusses ably enough the pathology of placental polypus as understood in 1889. "These polypi are the result of incomplete delivery of the afterbirth, fragments of placenta being left in the uterus." Retained portions of placenta are frequent in abortions after the third month, also after labour at term when the placenta is extracted manually. They are not unknown after

* "Polype placentaire intra-uterin d'apparence fibrineuse," Report of meeting of the Société Anatomique de Paris, 'Annales de Gynécol. et d'Obstét.,' April, 1895 (vol. xliii, p. 324).

natural delivery. The question of simple retention of fragments of placenta is well known to Fellows of our Society. Klasson admits that the limit between simple retention of placenta and placental polypus is "very difficult to define." But in my specimen the structure is clearly polypoid. This development of a distinct pedicle is, thinks Klasson, "a matter of time."

Klasson then describes a case. The patient was twenty-four, confined three years before observation. She became pregnant in April (1888?). A week's free flooding in June ended in expulsion of a three months fœtus on June 23rd. A fortnight later there was free show, then uterine colic. On July 21st she called in the doctor. The fundus extended four fingers' breadth above the pubes. The cervix was found much dilated. A lobular mass, resembling placenta, was detected in the uterine cavity. At the fundus the mass adhered to the uterine wall by a broad base. It was partially detached by the finger, and next day removed by the curette. It was found to be placental tissue.

The placental tissue seemed, in bulk, out of relation to the stage which the pregnancy had reached when abortion occurred. Hence Dr. Klasson believes that it continued to grow during the twenty-nine days that it remained in the uterus, owing to its intimate connection with the wall of that organ. Delore* believes that in blighted ova the villi increase for a time, at least they grow larger through œdema; and that change, Dr. Klasson thinks, must have occurred in the case just recorded.

I have designedly quoted Klasson's opinion about placental tissue growing after the loss of the fœtus. We all know how the placenta seems to increase in size in cases of extra-uterine pregnancy where the fœtus has been retained beyond term. Unlike Delore, who qualifies his assertion that the villi increase, some writers speak as though the essential tissue of the retained placenta really

* Article "Placenta," 'Dictionnaire encyclopéd. des sciences médicales.'

grew. Clarence Webster,* however, shows that this growth of placenta is neither hypertrophy, hyperplasia, nor simple continued growth of the essential placental elements.

"That correct observations have been made in many instances as to the *increase in size of the placenta* after the death of the fœtus, or its removal by operation, cannot be disputed. The explanation of the increase as being *due to growth is the mistake that has been made.* The change in the size of the placenta is due not to growth of its tissue, but to extravasations of maternal blood, varying in size and number, which alter the continuity of the villi and their relations to one another."

As with the retained placenta in advanced ectopic gestation, so it usually is with the retained placental tissue in a placental polypus. The sections in my specimen show villi, but they are degenerate, like the villi we so often find in hæmatosalpinx from ectopic gestation. As I said at the beginning, it was when working at the latter subject that I investigated this specimen which seemed so suspicious.

Before I discuss the precise pathological meaning of a non-septic placental relic in the uterus, I must note that in Klasson's case a fortnight elapsed between the abortion and the onset of the first attack of hæmorrhage. In the case which forms the basis of this paper there had been amenorrhœa for several months, and the patient thought herself pregnant. The operator dreaded that abortion might follow the removal of the cyst. No show was seen during the five days that she survived.

Thus my case is exceptional, for all the cases collected by the industry of Dr. Klasson seemed to be accompanied by uterine hæmorrhage, as in retained placenta which does not assume polypoid characters, but becomes septic or otherwise troublesome. The absence of "show" for a fortnight is noted by Klasson as something remarkable. Why it did not occur in my case seems uncertain.

* 'Ectopic Pregnancy: its Etiology, Classification, Embryology, Diagnosis, and Treatment,' 1895, p. 102. (The italics in the quotation are the author's.)

In conclusion, is a placental polypus an innocent growth? Clinically, no; it is a noxious element out of place amidst normal uterine tissues. MM. Hartmann and Toupet* draw an instructive picture of the dangers of non-septic fragments of placenta left in the uterus.† Though in these simple placental polypi the essential tissue does not really increase, it may do so in some cases. The polypus then becomes an "innocent deciduoma." The authors describe a case where there was flooding, as usual. They imply that all these polypi may be "deciduoma"—a theory not absolutely proved. They then speak of a very important disease which, it seems, has not yet reached our shores. Mr. Bland Sutton and myself have examined numerous uteri, but we have never made out this new disease, and neither our present President nor any other obstetrician of mark whom I have consulted has observed any cases, yet several Continental writers describe it minutely. I refer to malignant deciduoma,—clinically speaking, cancer of the uterus following labour. In 1894 Menge gave an excellent summary of the literature of this grave disease.‡ Klien§ relates a case where this malignant change followed hydatidiform mole. Hartmann and Toupet insist on not holding that well-known disease guiltless of malignant tendencies. The habit which the vesicles have of occasionally burrowing into the uterine wall and perforating it is possibly an indication of something worse than mere mechanical pressure.

Fortunately we know well enough that a placental

* "Des consequences tardives de la rétention partielle ou totale du placenta (endométrite déciduale hémorrhagique; placenta scléreux; déciduome bénin; mole hydatiforme; sarcome-chorio-cellulaire)," 'Annales de Gynéc. et d'Obstét.,' vol. xliii (April, 1895), p. 285.

† Perhaps the diffusion of antiseptic midwifery may increase the frequency of absence of septic changes in the retained fragments, which thus may have a chance of organising. As, however, placental polypi existed before antiseptics this theory is hardly conclusive.

‡ 'Zeitschrift f. Geburtsh. u. Gynäk.,' vol. xxx, pt. 2.

§ 'Archiv f. Gynäk.,' vol. xlvii, p. 243.

polypus requires one kind of treatment, and that is removal. The curette ought to be applied to its root, else worse may follow. I should like to hear what the Obstetrical Society has to say about malignant deciduoma. The only case which has been observed out of continental Europe is somewhat doubtful. It is described by Dr. Boldt (*loc. cit.*, p. 597): "A woman, aged 33 years, had aborted about the fourth month. Shortly after abortion sanguineous discharges again occurred, and she was curetted by her family physician, under the impression that placental remnants were left *in utero*. When seen by me about four months subsequently the uterus was greatly enlarged, and the patient anæmic. An examination of the débris resulted in the diagnosis of a peculiar form of sarcoma. The patient died a few months subsequently of asthenia, pleurisy with effusion having taken place. Unfortunately no post-mortem was permitted." I can find no other original observations on malignant deciduoma written in the English language, excepting a valuable monograph by Bacon, of Chicago.*

[Since the reading of this paper I find that Dr. Whitridge Williams, of Baltimore, reported in the June number of the 'American Gynecological and Obstetrical Journal,' a case of deciduoma malignum under his own observation. The patient died within three months after labour, and there were abundant metastatic deposits in each lung.]

Dr. Galabin said that he had met with one case only which suggested that a growth of the uterine wall had originated from an ovum. A lady became pregnant near the usual time of the menopause. She had hæmorrhage in pregnancy, and the uterus was emptied of what was described by a good observer as an undoubted vesicular mole. Hæmorrhage recurred in a few

* "A Case of Deciduoma Malignum: a Contribution to the Study of Malignant Tumours composed of Placental Tissue," 'Amer. Journ. Obstet.,' May, 1895, p. 679. The case occurred in Prague, not in America. All the twenty cases in Dr. Bacon's valuable statistical tables were observed in continental Europe.

weeks, and there were expelled rounded gelatinous masses mixed with the blood, but differing from the vesicles of a mole in that they had no stalks. Dr. Galabin emptied the uterus of a growth springing from its wall and proliferating into the interior, which had the structure of myxoma. There remained a ragged cavity, leaving the uterine wall very thin, and he feared that the growth would run a malignant course. Twice the growth recurred, and the uterus was again evacuated of the proliferating portion of it. After this the hæmorrhage gradually ceased; menstruation recurred a few times, but the uterus diminished in size with the onset of the menopause, and the patient had now remained perfectly well more than three years without any return of hæmorrhage. At the time he had been inclined to doubt whether the diagnosis of vesicular mole might not have been mistaken, and the growth one of the endometrium from the first. As, however, it had ultimately died out he thought it very possible that the vesicles of a mole penetrating the uterine wall had infected the uterus with a tendency to grow myxoma, but that the growth, not being actually cancerous, had died out with the aid of the menopause coming on.

Dr. Herbert Spencer had, six years ago, met with a case which he believed to be of the nature of the deciduoma malignum of continental authorities. A woman about twenty-five years of age died two months after delivery with symptoms of septicæmia and signs of uterine cancer. During life several pieces of putrid "placenta" had been removed. At the post-mortem examination growth and ulceration were found in the situation of the placental site, where the wall was almost eaten through, and also (unlike most cases) in the cervix. The microscopic examination of the uterine growth was somewhat unsatisfactory, but it appeared to be sarcomatous. In the lungs were many secondary growths, some as large as a walnut; under the microscope they were evidently sarcomatous. He had hoped to meet with another case in which the microscopic examination of the primary growth would be more satisfactory, but as the above-mentioned appeared to be the only case of the kind in this country he would be happy to bring it before the Society. The specimens were in University College Museum.

Mr. Alban Doran, in reply to Dr. Galabin, said that in some cases hydatidiform moles undoubtedly displayed malignant characters. A mole of this class is histologically myxomatous. General pathologists, however, were not entirely agreed as to the limits of the term myxoma. Sometimes, especially in fœtal structures, mucoid tissue was normal, and not in any sense a new growth. In other conditions it was closely associated with sarcoma. Dr. Griffith's tumour seemed to be a true fibrinous polypus, as no placental tissue was detected in its substance. Mr. Doran could not believe that the foreign authorities who

described malignant deciduoma were absolutely mistaken. Hartmann and Toupet, as well as the German writers on this newly detected malady, pursued their investigations with great care. Their writings, as well as Lejars and Lévi's recent paper on placental polypi, deserved close study. Perhaps some unknown unfavorable condition, which prevailed in continental Europe but not in our country, explained the frequency of malignant deciduoma in France and Germany. Dr. Herbert Spencer's case was of the highest interest, and its early publication in full seemed very desirable. In conclusion Mr. Doran recommended careful inspection of all specimens of malignant disease of the uterus from patients under forty already preserved in museums. In future, in any patient of this kind, close inquiry should be made as to the occurrence of abortion within a few years of the appearance of evidence of malignancy.

OCTOBER 2ND, 1895.

F. H. CHAMPNEYS, M.A., M.D., President, in the Chair.

Present—36 Fellows and 3 visitors.

Books were presented by Dr. Gache, Dr. James Oliver, the Editor of the 'Archivio di Ostetricia e Ginecologia,' and the American Association of Obstetricians and Gynecologists. Dr. Lazarewitch presented some obstetrical instruments.

William Edwin Falkingbridge Tinley, M.B., B.S.; John Martin Munro Kerr, M.B., C.M.Glas.; James Newstead, M.R.C.S.; Alfred C. Coles, M.D., B.Sc.; James T. R. Miller; and Alfred William Robson, L.R.C.P.Edin., were declared admitted.

Frederick Ashton Warner, M.R.C.S., was elected a Fellow of the Society.

The following gentlemen were proposed for election:—Stanlake James, L.R.C.P.; Wilfred Newell Soden, M.B.Lond.; J. Prichard Roberts, L.R.C.P.I. (Harrogate).

FORCEPS, BREPHOTOME, AND BLUNT HOOK.

Presented to the museum by Professor I. LAZAREWITCH.

RUPTURED TUBAL GESTATION.

Shown by William Duncan, M.D.

The patient was a woman aged 32, who had one child two years previously. The periods were quite regular until May 20th, 1895. In June she saw merely two or three spots of blood. She considered herself pregnant, and saw nothing more until August 31st, when after a ride in an omnibus she was seized with labour-like pains and sickness, and felt very ill.

In the absence of Mr. Evan Jones, of Goswell Road (whose patient she was), she was seen by his *locum tenens*, who treated her for threatened abortion with rest in bed and opium.

On September 4th Mr. Jones saw her, and on examination found the uterus decidedly enlarged, and a soft, tender swelling in Douglas's pouch. On September 12th, as the hypogastric pain and loss of blood increased, accompanied by faintness, Mr. Jones considered the case one of tubal pregnancy, and sent for Dr. Duncan, who was absent from town. Another opinion was obtained, but the case was diagnosed as pelvic cellulitis, and hot douches ordered. On September 26th Dr. Jones was urgently sent for, owing to the patient being seized with sudden faintness and pain in the left iliac region; the patient was pale with a small and rapid pulse.

Dr. Duncan was sent for, and agreed with Mr. Jones' diagnosis of ruptured tubal pregnancy. Abdominal section was immediately performed. A large quantity of fluid and solid blood was removed from the abdominal cavity. Then the left tube and ovary were removed, the tube being much distended in its outer third, and rupture had occurred near the distal extremity.

Remarks.—The case and specimen are remarkably like one described and pictured in vol. xxxvi, p. 66, of the

'Obstetrical Transactions,' which also occurred in Mr. Evan Jones' practice, and was successfully diagnosed by him.

DOUBLE PYOSALPINX.

Shown by William Duncan, M.D.

A committee, consisting of Drs. Griffith, Maclean, and Duncan, was appointed to examine and report on this specimen.

NOTES ON THE VARIATION IN HEIGHT OF THE FUNDUS UTERI ABOVE THE SYMPHYSIS DURING THE PUERPERIUM, THE CONDITIONS WHICH INFLUENCE THIS, AND THE PRACTICAL CONCLUSIONS WHICH MAY BE DRAWN FROM SUCH OBSERVATIONS.

By Thomas G. Stevens, M.D., B.S.Lond., F.R.C.S.,

LATE RESIDENT MEDICAL OFFICER, QUEEN CHARLOTTE'S LYING-IN HOSPITAL;

AND

W. S. A. Griffith, M.D., F.R.C.S., F.R.C.P.,

PHYSICIAN TO QUEEN CHARLOTTE'S HOSPITAL.

(Received May 16th, 1895.)

(*Abstract.*)

This paper is to demonstrate the importance of recording by measurement "Charts of Involution" during the puerperium. It has been for the most part drawn up by Dr. Stevens, and is the result of observations by Dr. Griffith and Dr. Stevens at Queen Charlotte's Lying-in Hospital. The method of measurement is first described, with the precautions necessary to avoid errors, and the method of recording the measurements on the ordinary temperature charts.

The measurement is the height of the middle of the fundus above the symphysis.

The sources of error are—

1. Distension of the bladder.
2. Distension of the rectum.
3. Distension of the small intestines.
4. Prolapse of the uterus.
5. Abnormally high uterus.

6. Unusual bulk of uterine muscle.
7. Retroversion of the uterus.
8. Excessive lateral obliquity of the uterus.

The pathological conditions which interfere with the involution of the uterus, and therefore with the descent of the fundus, are—

1. Retention of portions of placenta and membranes, and of blood-clots and lochia.

2. Putrid decomposition within the uterus. (There have been no septic cases to study.)

Charts illustrating normal involution and its variations, and pathological conditions are given, and their value in indicating, even before any rise of temperature, putrid decomposition is demonstrated.

Reference is made to the work of Serdukoff ('Edin. Med. Journ.,' May, 1875, p. 965). The valuable work of Barbour ('The Anatomy of Labour,' 1889) has not been overlooked.

The object of this paper is to demonstrate a method of recording the height of the fundus uteri during the puerperium, to consider what conditions influence this, and the practical conclusions which may be drawn from such observations. The means at our disposal of estimating the size of the uterus after labour practically resolve themselves into taking external measurements, for repeated measurements with the sound cannot be regarded as justifiable or practicable proceedings. The measurements, however, that can be taken are vertical and horizontal ones through the abdominal parietes, and of those two the only one which can be usually relied upon is the vertical one. Unless the conditions are the most favourable, the transverse measurement of the uterus after labour is difficult to take, and not practicable after perhaps the first four days with any degree of accuracy unless the uterus remains abnormally large.

From the voluminous literature on the subject of uterine involution we find one paper which attacks the subject from the point of view of external measurements. It was

read by Dr. A. Serdukoff before the Edinburgh Obstetrical Society, and may be found in 'Ed. Med. Journal,' May, 1875, pp. 965—981. In it the author endeavours to arrive at what he calls the co-efficient of uterine involution by taking transverse and vertical measurements. After calculating the average decrease in size of each diameter from day to day in any given case he uses the average vertical decrease as a numerator, and the average horizontal decrease as a denominator, and from these calculations the "co-efficient of involution." The deductions are more scientific than practical, and our results differ from his on one or two important points, which will be indicated as they arise; but his contribution is the one valuable one we have met with on this subject, and deserves careful study.

Method of measuring and recording.—The top of the symphysis pubis is taken as the fixed point from which to measure the height of the fundus. It is very easily felt, even in fat subjects, by depressing the integuments over it, and if a simple wooden "foot" rule is made use of, forms a firm basis against which the end of the rule may be pressed. Before making any measurement certain precautions must be rigorously observed. The measurement must be taken at nearly the same hour daily. The bladder and the rectum *must* be empty; the douche, if any, must be given beforehand, and the uterus must be in the normal mesial position and anteverted, and must be measured in a state of contraction. If any of these precautions are neglected, fallacies must arise and erroneous records be produced. The top of the fundus is not always easy to find, and sometimes needs great care, especially after the first few days. When found the finger easily makes a tangent with it, and then the distance between the finger and the top of the symphysis can be measured, and so the height of the fundus above the pubes be determined.

Now, to be of practical use, these measurements must be recorded in such a way that the eye can take in at a

glance the condition of affairs. We found, after trying one or two ways, that the most convenient is to make use of the ordinary temperature chart attached to the case, and to record the height of the fundus on it in the form of a curve. Taking the 100° line of the temperature chart to represent the top of the symphysis, it follows that each degree above—*i. e.* 101°, 102°, &c.—may be taken to represent one, two, or more inches instead of degrees. Now, as most charts run up to 108° (which would represent eight inches), and very few uteri are found to exceed eight inches from the top of the pubes, the height of the fundus can be graphically recorded from day to day in the form of a curve, and what may be called the "curve of uterine involution" can be constructed. As a refinement this may be put down in red ink, and so be distinguished from the temperature curve, and a single glance will suffice to tell whether the fundus is normal in position or not.

Chart I may be taken as a type of the curves produced

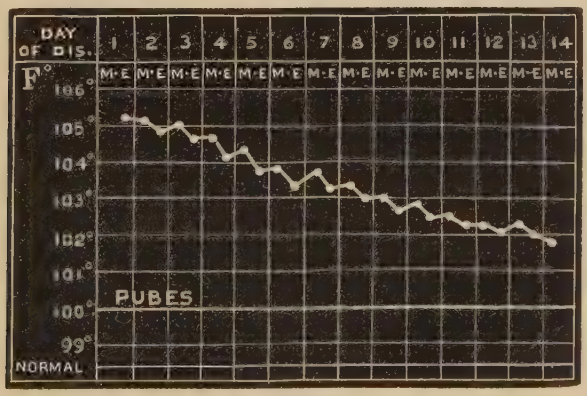


CHART I.—Average of thirty-four cases.

by this method of measurement; it is the mean of thirty-four mixed cases all carefully measured three times a day (the morning and evening positions only being shown in this figure). Here it may be said that all these

measurements were taken by the same person, Sister Agnes at Queen Charlotte's Hospital, under our supervision, and we can vouch for the very great care taken in recording them accurately, and especially in excluding sources of error.

These sources of error are—1. Distension of the bladder. 2. Distension of the rectum. 3. Distension of the small intestine. 4. Prolapse of the uterus. 5. Abnormally high uterus. 6. Unusual bulk of uterine muscle. 7. Retroversion of the uterus. 8. Excessive lateral obliquity of the uterus.

1. The *bladder*, varying as it does in size and position with the amount of distension, is by far the most important and most common organ which will influence the height of the uterus. When only slightly distended, it will be found on making a bimanual examination that the uterus is lifted up, and that its antero-posterior inclination is hardly, if at all, altered. It seems to lie in the middle line, and inclined at the same angle to the horizon as one would expect it to be if in its normal position.

With more distension the uterus begins to incline to one side or the other, and to assume a rather more vertical position antero-posteriorly. It does not seem to incline to one side more than another, though, taking into account its natural inclination to the right, it might be expected to be more likely to turn to that side. It does not, however, do so invariably, as left side deviations are quite common.

With large amounts of vesical distension the uterus is found in the hypochondriac region, and in one case of great distension (fifty ounces), very close to the margin of the ribs, at the same time becoming still more vertical in an antero-posterior direction. Hence the bladder never entirely conceals the uterus; it merely lifts it and tilts it to one side, with but little change of its natural antero-posterior inclination unless the distension is extreme. The effect of distension of the bladder is well shown in Chart II.

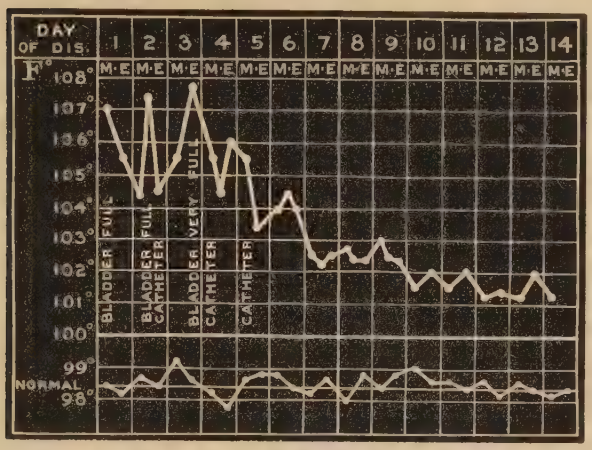


CHART II.—To show the effect of distension of the bladder.

The rectum.—Loading of the rectum is also undoubtedly of importance in altering the position of the uterus, and it seems to simply displace the uterus upwards

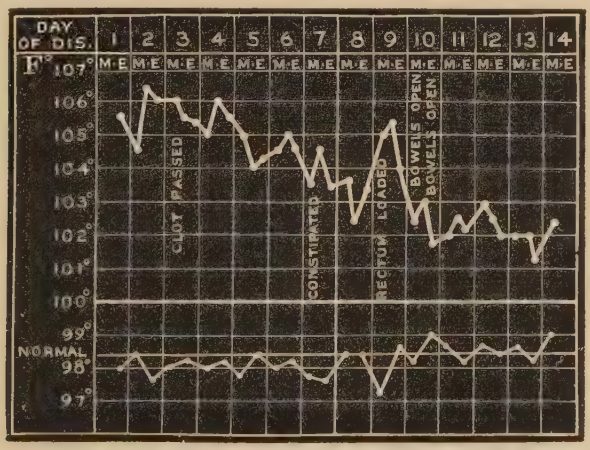


CHART III.—To show effect of constipation.

without any very definite deviation to the right side. Chart III shows very well how distension of the rectum may raise the uterus nearly three inches. It is at first difficult to

see how the rectum, which lies behind and to the left, can push up the uterus, but a little consideration shows how this is effected. As the rectum distends, it takes up more room in the pelvis, and consequently something has to leave that cavity, and as the uterus is the most moveable organ it is displaced upwards to a corresponding extent.

The small intestines.—It is only of very occasional occurrence that the small intestines can push up the uterus. Sometimes when greatly distended by flatus the intestine in the pouch of Douglas may possibly do this, but the uterus is more often obscured by small intestine getting in front of it when previously displaced backwards. Under these conditions the fundus is felt with the greatest difficulty, or perhaps not at all, and accurate measurement becomes an impossibility.

This backward displacement of the uterus is largely if not solely produced by the supine position usually adopted during the puerperium, the loose attachments of the uterus, especially in multiparæ, allowing the organ to drop back against the promontory of the sacrum by its own weight, displacement of intestine from the utero-sacral pouch naturally resulting. In these cases also there is no alteration in the natural antero-posterior inclination of the uterus, a condition we have on several occasions verified by a bimanual examination. In other cases true retroversion of the uterus is produced by intestine being forced down in front, and is increased by the intra-abdominal pressure acting on the anterior surface of the uterus instead of the posterior. In one case in which this occurred the retroversion produced was complete, the fundus occupying Douglas's pouch so as to appear to be almost lying on the perinæum, and forming a rounded swelling bulging forwards the posterior vaginal wall, the cervix looking forwards and upwards in the axis of the pelvic inlet. In these cases measurement is impossible, as the fundus cannot be felt from the front until the uterus is properly replaced.

Prolapse of the uterus.—When this condition has

existed before pregnancy the uterus after labour is likely to resume its lower position from the same causes. In one case in particular, in which the perinæum had been completely ruptured at a previous labour, the cervix could be seen on separating the labia, with a corresponding lowering of the fundus. In this case the lowering of the fundus allowed the intestine to come down freely in front, and, as a result, the uterus could not be felt from the abdomen even on the second day after labour.

5. Abnormally high uterus does seem to occur sometimes as an anatomical peculiarity; on what condition it depends, however, is not always certain; at all events, in taking measurements it must be borne in mind that such a condition may exist apart from the other sources of fallacy mentioned.

6. Unusual bulk of uterus also occurs, and will affect measurements. Some uteri are undoubtedly thicker walled than others, and will therefore give a higher measurement than normal; but this can scarcely be regarded as a fallacy, for it is natural to the particular case. At the same time this condition is somewhat difficult to demonstrate with certainty, and so every possible source of fallacy must be excluded before finally deciding that the unusual bulk of the uterus is the cause of the raised fundus.

7 and 8. Retroversion and lateral obliquity of the uterus have already been mentioned above.

We now come to the important pathological conditions of the uterus itself which affect the height of the fundus. They are retention of placenta, membranes, or clots; and putrid decomposition of these.

Retention of portions of the placenta and membranes or clots interfering with the involution of the uterus causes the fundus to remain high, but in the case of the membranes not invariably so. To dispose of the latter first, retention of even large pieces of chorion seemed to have very little effect on the height of the fundus, provided they remained aseptic; but retention of amnion in

any quantity nearly always produced an increase in height. Here let it be said that the increase in height of the fundus is not always proportionate to the size of the retained mass, whatever this may be. In many instances where a uterus has been explored with the finger, quite small pieces of clot or placenta have been removed; and yet, on taking a measurement afterwards, the height of the fundus has been found to have fallen two or perhaps three inches. A very interesting point with regard to many of these cases of retained masses is that, besides a raising of the fundus uteri, there often co-exists an asymmetry of the organ. A lateral bulge is often found, and tenderness of the uterus is complained of over the bulge. This seems to depend on the retained mass being attached to the uterine wall somewhere about the upper lateral angle, and is especially marked when the mass is undergoing putrid decomposition.

Chart IV shows the effect of retention of a large piece

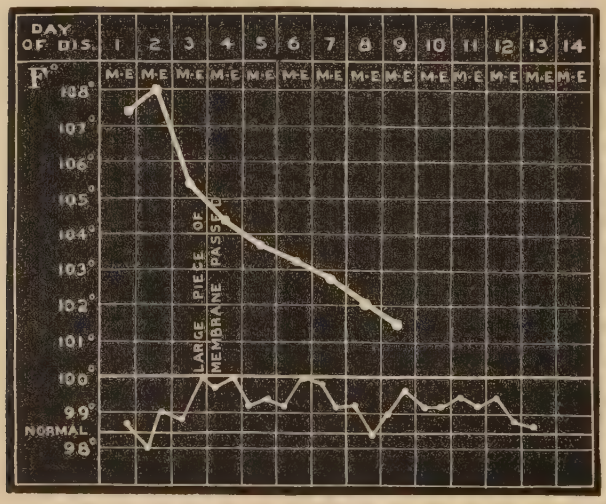


CHART IV.—To show effect of retention of membranes.

of membrane, consisting of amnion and chorion. After the membrane was expelled, which took place on the

third day, the uterus dropped from eight inches to five and a half.

Chart V shows very well the effect of the retention of

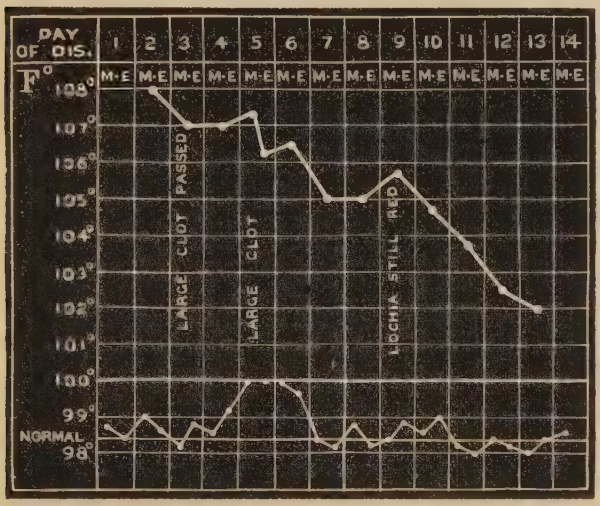


CHART V.—To show the effect of retention of clots.

clots, presumably aseptic, although it will be seen that the temperature rose to 100° on the fifth and sixth days. The clots were not offensive. Two large clots are noted to have been passed on the third and fifth day ; and on the ninth, the uterus still remaining at five and a half inches, the note says "discharge still red."

After this, however, as the chart shows, involution progressed very rapidly.

Putrid decomposition of the contents of the uterus, lochia included, acts in a similar way, rarely more excessively. But here the effect does not seem to be quite so mechanical as with aseptic contents, for the involution of the uterus seems to come to a standstill, and the elevation of the fundus remains the same, or may increase if the decomposition goes on. We are not able to show a chart to prove this actual increase in height, for

fortunately such cases rarely occur. One case, however, did occur, and it was found that the uterus measured one and a half inches more one afternoon than it did the previous day; the uterus was tender, but there was no rise of temperature. The interior of the uterus was at once explored, and a stinking decomposing clot was removed. Here the great practical value of this method of recording involution is manifest, for in some cases, at any rate, the "involution curve" will show at once that there is something amiss before the temperature rises; the uterus can be at once cleared out, and no doubt many cases of sapræmia and possibly septicæmia averted. In the above-mentioned case the patient complained of nothing except the tenderness of the uterus; she looked perfectly well, and yet was on the verge of an attack of sapræmia.

Charts VI and VII show very well how the uterus remains

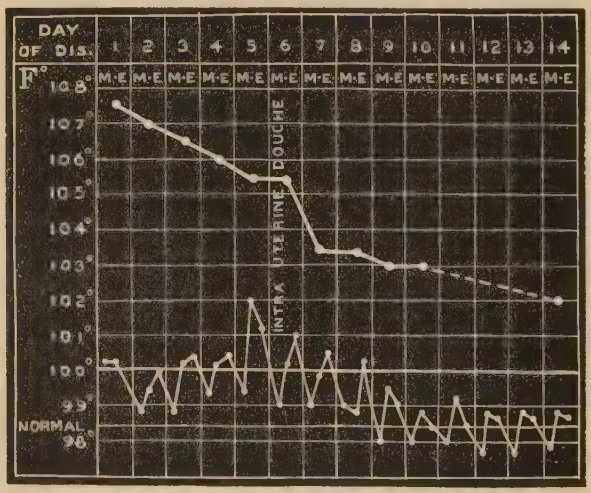


CHART VI.—Sapræmia. Effect of one douche and clearing out uterus.

high when its contents are decomposing; in each case after removing the decomposing material and washing out

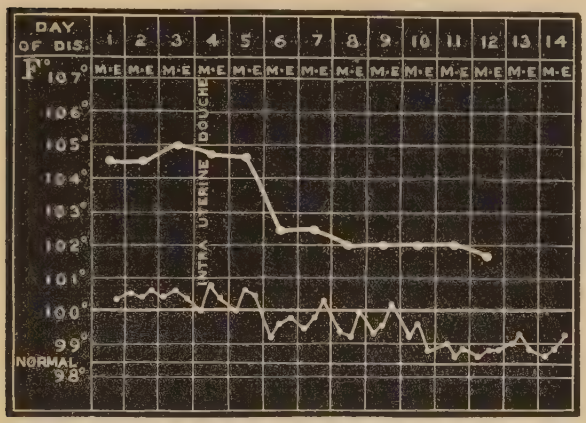


CHART VII.—Slight sapræmia. Decomposing clots; uterus washed out.

the uterus a fall of two inches at once occurred in the height of the fundus.

The curves themselves show some well-marked peculiarities which deserve attention, and throw some light on the normal involution of the uterus. The curve as a whole presents a slight concavity downwards, the reason for which being that the rate of involution decreases slightly from day to day, the first six days generally being represented by a steeper curve than the succeeding days. Hence we gather that involution is more rapid for about the first six days, and this observation is in accord with Serdukoff above mentioned, who stated that "involution was more rapid for the first four days." According to the average chart (Chart I) the rate of involution is represented by a fall of 2 inches during the first six days, and of about 1½ inches from the sixth to the twelfth days. Indeed, after the eighth day the rate of involution becomes very slow.

The average height above the pubes on the first evening is about 5¼ inches, the highest individual curve noted commencing at 7 inches, and the lowest at 3½. On the fourteenth day the average height above the

pubes is 2 inches nearly, the variations being from 1 to nearly 3 inches.

It has not been possible to define the exact day on which the uterus sinks behind the pubes, so that it cannot be felt from the abdomen, for as a rule our patients did not remain in the hospital after the fourteenth day. In one case, however, in which the uterus was measured up to the eighteenth day, it was then 1 inch above the pubes, and had only fallen 1½ inches from the fourteenth to the eighteenth day. With regard to this point authors of text-books differ widely. Playfair says "it cannot be felt by abdominal palpation on the eleventh day," a date which apparently is much too early in the majority of cases. Lusk says "it disappears behind the pubes about the tenth day;" Galabin, "about the end of the second week;" and Spiegelberg, "by the end of the third week," the last being apparently more nearly correct.

Both the individual curves and the average ones show a remarkable point, which it is somewhat difficult to explain, and which, we believe, has not been hitherto noted; it is that almost invariably there is a morning rise and an evening fall in the curve. This is extremely well marked in some of the individual curves, Chart VIII being an example, a multipara in her seventh pregnancy. It is not surprising that the morning measurement should always be higher than the corresponding evening one, but that the evening measurement should be lower than the succeeding morning one is a very remarkable fact, and was not anticipated. We are confident that this is not accidental or an error of observation, for all the curves taken show it in greater or less degree. Of course, if the rectum were supposed to be loaded every morning and the bladder slightly distended, an easy explanation could be given; but both the organs were carefully emptied first, and no measurement was recorded unless this was made sure of. It may be that the process of involution does not go on so rapidly during sleep, just as the functions of

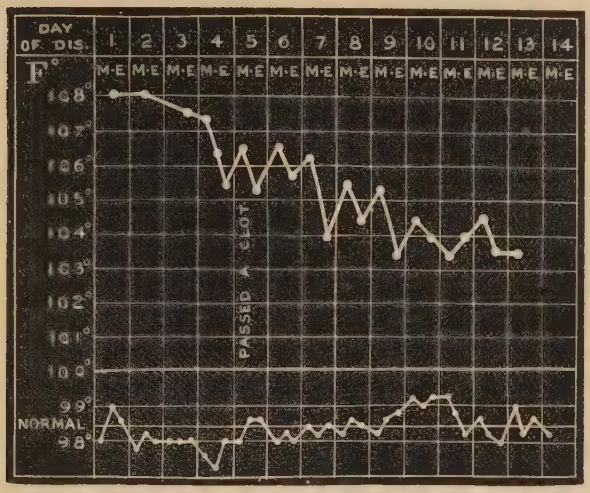


CHART VIII.—Multipara, æt. 35. Seventh pregnancy.

other organs are more or less in abeyance, *e. g.* digestion, and as a result a sort of general relaxation of the uterus occurs, producing an actual increase in size. Also this relaxation may allow a small amount of lochia to be retained, so a distension *plus* a relaxation is produced. Apropos of this it may be mentioned that nurses often report the morning lochia to be slightly offensive (perhaps owing to this small amount of retention), when it will be found that at midday the lochia from the same patient are quite sweet. No further explanation, at all events, is forthcoming at present, and the fact remains.

From a comparison of average curves from primiparæ and multiparæ, it will be seen that multiparity exerts an influence on the rate and completeness of involution.

Chart IX shows a comparison of the average curve of seventeen cases each of multiparæ and primiparæ. In every measurement the curve of the primiparæ is lower by about half an inch than the corresponding one of the multiparæ. Here also age seems to exert an influence, for on examining individual curves the older the multipara as a rule the higher will the curve be. As extreme

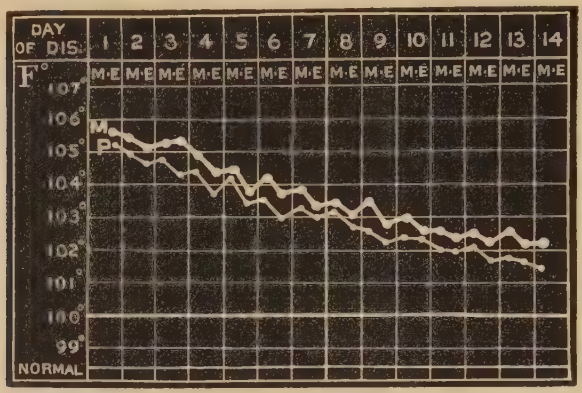


CHART IX.—Comparison between multiparæ and primiparæ. Seventeen cases each.

types, Chart VIII, from a woman of thirty-five in her seventh pregnancy, shows a very high curve; and Chart X,

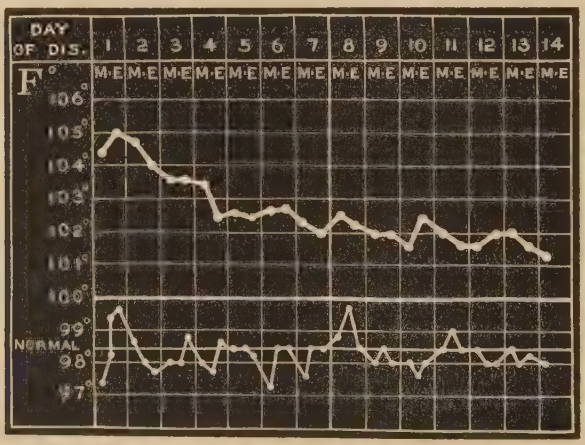


CHART X.—Young multipara, æt. 21. Second pregnancy.

from a woman of twenty-one in her second pregnancy, a low one. From this it may be concluded that in old multiparæ the uterus involutes slower than in young multiparæ and primiparæ, but that young multiparæ may, but do not

always involute as rapidly as primiparæ. This also agrees in the main with Serdukoff's conclusions. The reason why an old multiparous uterus does not involute so rapidly may be attributed to the inefficient contractile power of such a uterus. It is a matter of common observation that retention of clots is much more likely to occur in multiparæ than primiparæ, and we believe that the inefficiently contracting uterus of the multipara allows not only the retention of large clots at first, but also later of smaller and then of minute masses, and that it is the retention of these within the cavity that delays involution, and so produces the higher uterine curve. As to the application of this method of measuring and recording, hospital-trained nurses are easily taught to do it with sufficient accuracy for ordinary purposes. Their chief difficulties arise in the later days of the puerperium, when probably harmful variations in the height of the uterus are not so likely to occur. For the first week the measurements are quite easy to take, and we are convinced that a record in this manner is of the greatest possible value, and will be the means of detecting morbid processes early, and therefore of giving us better and more certain chances of cutting them short.

In conclusion we have to thank Dr. Grigg for the use of the charts of some of his cases at Queen Charlotte's Hospital.

Dr. McCann congratulated the authors on the success of their investigations. He referred to a similar series of observations carried out by him while Resident Medical Officer at Queen Charlotte's Hospital. In these he was careful to exclude septic cases. As a source of error he mentioned well-marked anteversion of the uterus. With regard to the influence of suckling he found that in those women showing complete absence of the lacteal secretion involution of the uterus was rapid. Where the lacteal secretion was present and used by the infant involution was rapid for the first few days, the rapidity diminishing later, probably owing to the stimulating effect from the breasts decreasing. The effect of prematurity of the labour as a cause of delayed involution was noted. Prolonged labour delays involution for the first days. The important bearing of

such a reseach was to determine the exact date when the uterus became a pelvic organ, for on this rested to a large extent our opinion as to when a puerperal woman should assume the erect posture. Text-books state that at the tenth day, *cæteris paribus*, a patient might leave her bed. Dr. McCann thought that a more scientific method was to investigate *per abdomen* the position of the uterus before giving an opinion. In support of his view he quoted the following figures. Out of 37 primiparæ the uterus was pelvic on the tenth day in 7; eleventh day in 6; ninth day in 5; eighth day in 3; twelfth day in 4; thirteenth day in 4. In the remaining 8 the uterus was not pelvic on the twelfth day. Out of twenty-one multiparæ eleventh day in 4; tenth day in 3; twelfth day in 3; ninth day in 1; eighth day in 2. In the remaining 8 the uterus was not pelvic on the thirteenth day. To enjoin rest was specially needful where the patient had a history of prolapse or backward displacement. By attention to this rule many aches and pains after confinements would be avoided.

Dr. Stevens in reply thanked the Society for the kind way in which the paper had been received, and said with regard to Dr. McCann's query as to extreme anteversion of the uterus being a source of error in measuring the uterus, that the dorsal position assumed for measuring purposes would tend to correct that displacement unless the anteversion was so extreme as to make the fundus lie entirely behind the symphysis pubis.

ON CERTAIN MICRO-ORGANISMS OF OBSTETRICAL AND GYNÆCOLOGICAL INTEREST.

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(*Abstract.*)

The writer points out the fact that in fatal cases of puerperal sepsis the *Streptococcus pyogenes* is constantly found in the blood and tissues.

All pathogenic organisms vary in virulence under various circumstances. The virulence of *Streptococcus pyogenes* is diminished by prolonged exposure to the action of the air, and increased by passage through the blood of a rabbit.

Normally after labour the uterine cavity contains no microbes, but in cases of puerperal sepsis, many micro-organisms of different sorts are found both in the uterine cavity and in the substance of the mucous membrane (decidua). Of these, however, the *Streptococcus pyogenes* appears alone to be able to pass through the uterine wall along the veins and lymphatics, and so to cause a general infection. The *Streptococcus pyogenes* may in these cases cause death without producing any obvious lesion. Such cases of pure septicæmia are uncommon; three such cases are cited.

Much more frequently the streptococcus sets up suppuration in various tissues.

Sometimes this microbe produces false membranes of the peritoneum or genital tract, with or without suppuration; two cases are cited.

Lastly, in some fatal cases of phlegmasia dolens the *Strepto-*

coccus pyogenes has been found in the clots plugging the veins of the uterine walls and broad ligaments—more rarely in the clots of the iliac veins,—and even infiltrating the vein wall itself.

The writer next points out the supposed connection of the *Bacillus coli-communis* with various inflammations (usually suppurative) of the human body.

He quotes a case in which a woman four months pregnant had intestinal obstruction from incarceration of a retroverted gravid uterus.

Abortion occurred four days after reposition of the uterus, and this was followed in a few hours by fever and diarrhœa, which continued until the death of the patient five days later. During life pure cultures of the *Bacillus coli-communis* were obtained from the uterine discharge, and after death these were also obtained from the uterine cavity, peritoneum, and heart's blood.

Attention is next drawn to the gonococcus, its appearances as seen in gonorrhœal pus or in pure cultures and its relationship to gonorrhœal discharges.

The writer also mentions the fact that in women this organism has been demonstrated in the pus of gonorrhœal vulvitis, urethritis, vaginitis, cervicitis, salpingitis and pyosalpinx, and peritonitis.

Mr. President and Gentlemen.—During the last few years the study of bacteriology has thrown a flood of light on many hitherto dark regions in the domain of pathology.

It has in numerous instances enabled us to trace disease to its primary source and to demonstrate its parasitic nature.

The character of the pathogenic germ, its mode of gaining access to the body, the circumstances which favour or retard its growth, and the morbid changes it produces in the tissues of its host,—all these questions so long baffling our best efforts at solution this young science has, at any rate partially, been able to explain for us. By its assistance we have learned how to take such measures as will ward off some of the most fatal of dis-

eases; nor are we without hope that it may come to our aid even when the malady has been already contracted, for in these latter days we have rich promise that under such circumstances it may furnish us with potent remedies, without which we are well-nigh powerless.

Our own special branch of Medicine is particularly indebted to this study, and few meetings of this Society pass by without some topic bearing directly or indirectly on it being discussed. I thought it might not be uninteresting to the Fellows of the Society if, without pretending to be a bacteriologist myself, I were to bring to their notice some of the micro-organisms that possess a special obstetrical and gynæcological interest, particularly if I were able to demonstrate their form and methods of growth. I propose to limit my remarks to three varieties of microbes which play or are said to play an important *rôle* in the pathology of obstetrics and gynæcology. I shall endeavour to give you a short account of their chief characteristics, the conditions under which they are found in the body, and the morbid changes which they produce, making only such passing mention of other organisms as the treatment of the subject may seem to demand.

The first micro-organism to which I would invite your attention is the *Streptococcus pyogenes.*

This microbe is found within the human body under a variety of circumstances. It is probably the most important cause of septicæmia and pyæmia following wounds, of ulcerative endocarditis, ulcerative tonsillitis, and, according to many, of erysipelas. It is also found in many abscesses. That it is the chief cause of the various septic processes which follow labour appears to be established, for in such cases, where fatal, it is constantly found in the blood and tissues, generally pure, but sometimes associated with other microbes.

This pathogenic germ has been found in the air of certain hospital wards and in the mouth, nose, and vagina —the latter very rarely—of healthy persons.

The organisms occur as small cocci, of which the typical arrangement is in strings or chains, sometimes of considerable length. They are, however, seen sometimes in large masses like staphylococci, or in pairs as diplococci, or even as single cocci.

It has long been a well-recognised fact that the manifestations of a given infectious disease are by no means always the same. Thus one epidemic of enteric fever or of diphtheria may differ widely in its results from another epidemic of the same disease, and even during the same epidemic there may be much variation in the clinical symptoms and pathological lesions amongst the various individuals attacked.

These variations depend, no doubt, upon a number of conditions, such as the soil in which the microbe has to grow and the amount of the original dose of the virus. But a very important factor is undoubtedly the virulence and character of the infecting organism. This fact is well illustrated by the special peculiarities connected with an epidemic, in which the disease has been transmitted to a number of different persons by germs derived from a common source.

This variation in virulence between different specimens of the same species is common to all pathogenic organisms. Under certain conditions their virulence is increased whilst under others it becomes attenuated.

This is particularly true of the *Streptococcus pyogenes*, now under consideration. When inoculation experiments are made with it upon animals, sometimes it produces abscesses, either localised at the point of inoculation or diffused throughout the body, whilst at other times it gives rise to an erythematous condition of the skin; in both these instances it may or may not produce death by general infection. In the last place it may produce death by general infection, without any sign of erythema or pus formation whatsoever. Then, again, its death-producing power is liable to remarkable variations.

Cultures grown *in vacuo*, or in an atmosphere free from

oxygen will retain their virulence for many months, but exposed to the air they rapidly lose it; so that a dose of a culture which would speedily produce death when injected into a rabbit, would, after this culture had been exposed to the air for some weeks, give rise to no morbid result whatever, or, at most, only to an abscess or patch of erythema at the point of inoculation.

If, however, the virus attenuated in this manner by the action of the air be introduced in very large quantity into a rabbit, the animal dies of general infection, and from its blood cultures may be obtained which are extremely virulent. It is thus seen that the virulence of the *Streptococcus pyogenes* can be lessened by exposure to the air and increased by passage through the blood of a rabbit. These variations in the virulence of the germ, and in its effects on living structures, explain the differences observed in the lesions, and in the severity of the symptoms produced by it when it has gained an entrance to the human blood and tissues.

In 1879 Pasteur drew attention to the presence of micrococci arranged in chains, found during life and after death in the blood and abscesses of women exhibiting the results of puerperal fever.

In the next year Doléris described streptococci, diplococci, single cocci, and bacilli found under similar circumstances. It seems probable that the various cocci, noted by this latter observer, were merely variations in the form of the same organism—the *Streptococcus pyogenes*,—and that the bacilli were exceptional. Since then various workers have investigated the subject, among others Bumm and Widal.

In 1889 Widal published an interesting thesis on the relationship of the *Streptococcus pyogenes* to the various manifestations of puerperal sepsis, and to him I am chiefly indebted for the remarks on the subject in this paper.

It appears from the reports of numerous trustworthy observers that in healthy women, both in the pregnant

and non-pregnant condition, the vagina and cervix uteri contain numerous micro-organisms. These are generally purely saprophytic, but occasionally they are pathogenic. Thus Widal has found the *Streptococcus pyogenes* in the vagina of a healthy woman, and I have myself found the *Bacilli coli-communis* in the secretion of the cervix.

Winter has shown that the Fallopian tubes and the uterine cavity, during health, are entirely free from organisms.

Doederlein found that after labour, under normal conditions, although the vaginal lochia teem with germs, yet the discharge obtained from the uterine cavity is absolutely free from them. That this is also the case in rabbits, guinea-pigs, rats, and mice has been demonstrated by Straus and Sanchez-Toledo.

In septic puerperal cases, however, matters are very different. The clots, débris, &c., contained in the uterine cavity itself swarm with micro-organisms—cocci and bacilli—and the same is true of the uterine mucous membrane, this being infiltrated with germs to a considerable depth.

Widal examined the uterine walls in twelve cases of puerperal sepsis. In all he found numerous organisms in the superficial portion of the mucous membrane, but only streptococci, which were present in all twelve cases, had penetrated the muscular tissue. It is well known that the *Streptococcus pyogenes* has greater power of penetrating the tissues, and thus becoming diffused throughout the body, than other pyogenic organisms, such as the *Staphylococcus pyogenes-aureus*.

In cases infected during or after labour various microbes are introduced to the uterus, but most of these are filtered off by such part of the decidua as remains, the streptococcus alone being able to pass through the filter, and extending along the lymphatics or blood vessels to produce morbid changes in distant parts. This filter action of the uterine decidua is strongly marked in some of the lower animals. Thus Straus and Sanchez-

Toledo, by injecting virulent cultures of *Staphylococcus pyogenes aureus, Bacillus anthracis,* and some other organisms, into the uteri of rabbits and guinea-pigs after labour, were unable in this manner to produce infection. In these rodents, unlike woman, the uterine mucous membrane is practically uninjured by labour. The streptococci, in the majority of fatal cases, pass through the uterine walls, along the vessels and lymphatics, as above stated, and in this way reach the various organs and tissues. Sometimes, though apparently more rarely, they pass along the Fallopian tubes direct to the peritoneal cavity, perhaps setting up suppuration as they go. By infecting the blood they may cause death without giving rise to any morbid change in the body, obvious to the naked eye.

Such cases of pure septicæmia are relatively uncommon. Widal made autopsies on three such. The patients first showed symptoms on the third or fourth day after labour; one died on the third, another on the sixth, and the third on the fifteenth day after the onset of symptoms. In all these cases pure cultures of the *Streptococcus pyogenes* were obtained from the heart's blood and various organs. It thus appears that in this form of septic puerperal poisoning, due to the *Streptococcus pyogenes,* death may occur in a few days or may be delayed for over a fortnight. More often the streptococcus acts as a pyogenic organism, setting up suppuration in various tissues. The suppuration may be limited to the uterus or parametric connective tissue, and such cases probably recover if the organisms become encysted in the abscess. Suppurative peritonitis may be due to inflammation spreading along the Fallopian tubes or to the cocci passing to the peritoneal cavity through the lymphatics of the uterine wall.

In certain epidemics of puerperal sepsis, suppuration in a particular organ or cavity is the rule.

Thus in the year 1854 an epidemic broke out in the Maternité at Paris. During the month of October of

that year there were sixty-one cases with forty-two deaths; of these sixty-one cases, in fifteen instances double empyema appeared as a complication, and in eleven other cases single empyema occurred, making a total of twenty-six cases of empyema out of sixty-one of puerperal sepsis.

When numerous abscesses are formed, other microbes are sometimes found associated with the streptococci, in the older foci of suppuration; the organism most frequently found is the *Staphylococcus pyogenes-aureus*. But since the most recent foci afford pure cultures of the streptococcus, as do also the blood and organs that show no suppuration, it seems probable that this organism is really the essential cause of the suppuration, the staphylococci, &c., being of only secondary importance. In cases of chronic puerperal infection with suppuration, the microbes at the end of a certain time seem to remain encysted in the abscess and are no longer found in the blood—an infection, general at first, has become localised.

Thus a woman on the third day after labour was seized with rigors, fever, &c. An empyema eventually formed, from the pus of which pure cultures of *Streptococcus pyogenes* were obtained, but the microbes occurred only in scanty number and their virulence was greatly attenuated, even large doses being harmless to rabbits. Some epidemics of "puerperal fever" have been characterised by the formation of false membranes, resembling those of diphtheria.

In 1874 an epidemic broke out in the Lying-in Department of the Bellevue Hospital, New York. A woman was seized after labour with febrile symptoms accompanied by diphtheritic patches of the vulva. This was followed by a number of cases of a similar sort. In the months of April and May there were fifty-one cases of "puerperal fever," and of these, twenty assumed the diphtheritic form. Of these twenty cases, which showed membranous patches, ten died.

In two fatal cases which exhibited similar false

membranes, streptococci were found in the blood and organs.

In the first case death occurred twelve days after parturition, and nine days after the onset of symptoms.

Post mortem, pus was found in the uterine muscle, right Fallopian tube, peritoneum, and lung, whilst there was false membrane lining the cavity of the uterus.

The *Streptococcus pyogenes* was found in the membrane and in all the abscesses and organs.

In the second case death took place twenty-one days after labour and eighteen days after the onset of the disease.

Post mortem there was no pus found anywhere.

False membranes were found on the vulva and vagina, and in the cavities of the uterus and peritoneum; there was also phlegmasia dolens of both lower limbs.

The *Streptococcus pyogenes* was found in the false membranes, blood, and various organs.

Lastly, the *Streptococcus pyogenes* has been found in certain fatal cases of phlegmasia dolens which followed labour, or were consequent on disease or injury of the uterus. Widal describes two cases.

The *first case* was the one above referred to as presenting false membrane throughout the parturient canal and in the peritoneum. This patient, who died on the twenty-first day after labour and on the eighteenth after the onset of febrile symptoms, first showed signs of phlegmasia dolens a few days before death, that is in the third week after labour. The swelling first appeared in one leg, and then rapidly attacked the other.

The *second case* occurred in a woman suffering from a sloughing intra-uterine fibroid.

A *third case* is described by Chautemesse. A woman who suspected that she was pregnant, wishing to terminate her pregnancy, passed a sharp-pointed penholder into her uterus. This was followed by some hæmorrhage, but no ovum was expelled. Three days afterwards there were rigors and headache, and ten days afterwards the left

lower limb became swollen and painful. Later still several joints suppurated. No ovum was ever passed, and after death the uterine cavity was found empty and communicating with a small abscess situated in the muscular wall on the left side.

In all these three cases clots were found in the veins of the uterine walls and broad ligaments, and these extended to the iliac vein on the side or sides showing the phlegmasia dolens. These clots varied in structure according to their situation. In the uterine walls and broad ligaments the clot, in its central part, consisted chiefly of fibrin, with few of the cellular elements of the blood. Further from the uterus it consisted of ordinary clotted blood. It was apparent that in the uterine walls the clot was primary, and that by extension from this by secondary clotting the iliac veins had at length become plugged.

In the secondary clots no micro-organisms could be found, but in the primary clots of the uterine walls and broad ligaments strings of streptococci were discovered. In some places they were situated on the surface of the clot, between it and the vein wall. In other places they were seen infiltrating the clot and penetrating the vein wall itself, here and there extending as far outwards as its outer coat. In two cases there were signs of the clots suppurating.

Whether all, or even most cases of painful swollen leg occurring after labour are due to poisoning by the *Streptococcus pyogenes*, or any other germ, is a doubtful point recently discussed at this Society.

That, as a rule, the swelling does not appear until some days after delivery has been brought as an argument to prove that most cases are not of septic origin.

But of two of the cases quoted above, in which the *Streptococcus pyogenes* was demonstrated in the thrombi, one did not show signs of phlegmasia dolens until the third week after labour, and the other not until the tenth day after the injury to the uterus. It has been maintained,

moreover, by some that a careful reference to the temperature charts of patients who, having for a time appeared to do well, are attacked many days after labour with phlegmasia alba dolens, will show about the third or fourth day a rise more or less marked, and indicating a mild attack of septic poisoning from a *Streptococcus pyogenes* of probably greatly attenuated virulence. It is thus seen that the same organism, by infecting a puerperal woman, is capable of producing the most various lesions. Quite recently attempts have been made to treat women suffering from puerperal septicæmia by injections of an anti-streptococcic serum. The results in some cases appear to have been encouraging, but the whole matter is so young that no positive statements concerning its value can yet be made.

I would next introduce to your notice the *Bacillus coli-communis*, which is at present exciting a good deal of interest, especially among abdominal surgeons.

The organisms occur typically as short rods with rounded ends, and might easily be mistaken for micrococci; not infrequently the bacilli are arranged in pairs. They are found normally in the alimentary canal of man and of many of the lower animals, from whence, just before or after death, they seem to be able to pass to the peritoneal cavity and neighbouring organs.

Outside the body it is very wide-spread in its distribution, being found in dust, water, &c.

There are numerous varieties, which vary in pathogenic power, and to some extent in their growth in culture media, but the differences observed do not seem to be sufficiently characteristic to justify us in considering them as distinct species. Under ordinary circumstances in the intestine of man they seem to possess no pathogenic power.

A comparatively small dose of a pure culture injected into the circulation of a guinea-pig usually causes death in three or four days, and large numbers of the bacilli are then found in the blood of the animal. If, however,

the organism is injected into the subcutaneous tissue or peritoneal cavity, the result depends upon the dose. Diarrhœa is often a prominent symptom, both in fatal cases and also in those that eventually recover.

Like other pathogenic microbes it varies much in virulence; thus, whilst a culture obtained from a healthy intestine may have little or no pathogenic power, that obtained from the same individual when suffering from diarrhœa, enteric fever, or other intestinal disease, is markedly virulent.

By many this bacillus is considered to be the causative agent in those cases of peritonitis which are secondary to various morbid conditions of the digestive tract—such as perforation or strangulation of the bowel,—and also in the peritonitis sometimes following abdominal section, in certain inflammatory affections of the bladder, in suppuration of the gall-bladder and thyroid gland, and in some cases of hepatic abscess and suppurative meningitis. It appears that this organism is unable to pass through the walls of a healthy bowel, but that when the gut has been injured by the manipulations sometimes necessary during an abdominal operation, or when the lumen has become occluded by strangulation, or in any other way, it is then able to penetrate through to the peritoneum, and there set up an inflammatory process. Peritonitis due to this organism is said to be generally purulent.

Even pressure on the intestinal wall by scybala is supposed by some to be sufficient to enable the bacillus to pass through into the peritoneum and blood. Thus I have come across a number of recorded cases in which constipation in puerperal women was followed by high fever, rigors, and other alarming symptoms, which rapidly disappeared after free evacuation of the intestinal contents had been secured, and in which the *Bacillus coli-communis* has been accused of creating all the disturbance. One author gives a case of puerperal phlegmasia dolens which he considers to be due to this cause. In none of these cases were any bacteriological observations made,

and hence it would not be to the purpose to mention them in detail. A very interesting case has, however, been carefully investigated and reported by Chantemesse, Widal, and Legry, which I think is well worth considering for a few moments.

Case.—A patient four months pregnant had had no action of the bowels for seven days when she was attacked with vomiting and severe pain in both iliac fossæ.

She was first seen two days after the onset of the symptoms; the pain and vomiting continued, much green material being ejected from the stomach. The abdomen was greatly distended and very tender. Temp. 99·5°. On vaginal examination the pregnant uterus was found retroverted and incarcerated in the pelvis; there is no note as to the condition of the bladder.

The patient was placed in the genu-pectoral position and the uterus was pushed out of the pelvis by a finger in the rectum. There was an immediate escape of a large quantity of gas and liquid fæcal material from the bowel, and the patient experienced marked relief. During the next four days the patient was comparatively comfortable; the temperature was only slightly raised in the evenings (100°) and the distension and tenderness of the abdomen had disappeared. At the end of this time abortion occurred, without pain. A few hours later the temperature suddenly rose to 102·2°, and the patient seemed ill.

During the following three days the temperature fluctuated between 100° and 103·5°, and diarrhœa was a prominent symptom. On the fourth day after the abortion rigors occurred, the temperature going up to about 104°. The uterine cavity was then washed out with two litres of 1 in 1000 solution of perchloride of mercury.

A quantity of clots and placental débris came away with the douche, and inoculations of this material on nutrient media gave pure cultures of the colon bacillus.

Next day—fifth from abortion—the temperature still remained about 102·2°; the extremities were very cold and the face pinched. The cavity of the uterus was curetted, and some more débris removed. A few hours later the woman died.

At the post-mortem examination pus of a green colour was found in the lower part of the abdomen. There was no obvious lesion of the intestine. From the pus in the abdominal cavity, the discharge contained in the uterus and vagina, and the blood from the heart, pure cultures of the *Bacillus coli-communis* were obtained.

It was supposed that in this case the retroverted gravid uterus by compressing the intestine so injured its walls as to allow the colon bacillus to pass through them, and thus cause a general infection which destroyed life.

The last micro-organism of which I shall make mention is the gonococcus discovered by Neisser in 1879, in the pus of gonorrhœal discharges.

In 1885 Bumm succeeded in growing the organism, and in separating it from others which are usually contained in gonorrhœal pus.

Since this date numerous culture experiments have been made with it, and the process of growing it has been to some extent simplified, though even now it is a troublesome microbe to cultivate, since it is rapidly killed by exposure to the ordinary temperature of the air, and it refuses to develop on the ordinary media used in bacteriology. In gonorrhœal pus the gonococci are found either lying between the pus cells, or contained within them. This latter arrangement is typical, the organisms being found within the cells sometimes one or two pairs only, but frequently in considerable number.

The gonococci behave in a peculiar manner when treated with certain staining reagents, and this peculiarity, taken with their arrangement within the pus cells, is sufficient to enable one to diagnose them with absolute certainty. They are usually joined in pairs, sometimes in fours. In shape they are something like coffee-beans, and are

arranged with the flattened surfaces facing each other, whilst between these two flattened surfaces there is a very narrow chink which does not take the stain.

Bumm by growing the gonococcus on human blood serum, solidified by heat, was able with a cultivation of the twentieth generation to produce typical gonorrhœa in the urethra of a previously healthy woman.

Bockhart and Wertheim with cultures on a mixture of human blood serum and agar-agar produced gonorrhœa in the male urethra in a number of instances.

Aufuso with a cultivation of the twelfth generation, grown in synovial fluid, also experimentally produced the disease.

There can therefore no longer be any doubt that the gonococcus of Neisser is the cause of gonorrhœa.

Some observers claim to have found the gonococcus in the fluid of joints affected with gonorrhœal synovitis, but this seems doubtful. The germ has been demonstrated in cases of gonorrhœal ophthalmia. In women suffering from gonorrhœa the gonococcus is most frequently found in the urethra and at the vulva, and next in order of frequency in the cervical secretion. Gonorrhœal vaginitis, according to many observers, is by no means so common as is usually taught.

It seems probable that in many instances the cervical canal is infected at the same time as the urethra and vulva.

In little girls vulvitis may be the only result of a gonorrhœal infection.

The gonococcus having reached the cervical canal either by direct infection or by extension from a vaginitis, may spread along the Fallopian tubes, and eventually reach the peritoneal cavity, setting up first a salpingitis and then a peritonitis.

In all the situations mentioned the presence of the gonococcus has been demonstrated. In the discharges from the vulva, urethra, vagina, and cervix they have frequently been found. During the past few years their

presence in the pus of certain cases of pyosalpinx has been shown by several observers, both by staining specimens of the pus and also by cultures. The cultures have generally been pure, but occasionally other microbes have been found also. By injecting cultures of gonococci, obtained from the pus of pyosalpinx, into the male urethra, Wertheim produced typical gonorrhœa, a fact already alluded to. The same observer was able to cultivate the gonococcus from the pus found in the pelvis of a patient on whom abdominal section had been performed.

In this case the left Fallopian tube appeared healthy, but pus containing gonococci was contained in the lumen of the right, from whence it had obviously escaped into the peritoneal cavity and there set up a suppurative peritonitis. Gonococci have also been demonstrated in the pus of rectal gonorrhœa.

The gonococcus, unlike the *Streptococcus pyogenes* and colon bacillus, is unable to penetrate the tissues to any great depth, except perhaps under unusual circumstances, but spreads along the mucous membranes to which it may happen to have been applied.

By injecting pure cultures of gonococci into the abdominal cavities of white mice and guinea-pigs Wertheim succeeded in producing a suppurative peritonitis.

Numerous experiments on animals have hitherto failed to produce gonorrhœa of the conjunctiva, urethra, or vagina. Quite recently, however, Túrro of Barcelona claims to have produced gonorrhœa in the urethra of male dogs and in the vagina of bitches, by the injection of gonococci which he had cultivated on acid media. I have made repeated attempts to grow the gonococcus on acid media, according to the method of Túrro, but hitherto without success.

One point in which this organism differs from the two previously described is in its extreme sensitiveness to temperature. Streptococci and the *Bacillus coli-communis* remain alive indefinitely at the ordinary temperature of the air; but at this temperature, even on a hot day, the

gonococcus rapidly dies. To this peculiarity no doubt is due the fact that gonorrhœal ophthalmia and vulvitis are not much more frequently conveyed by handkerchiefs, &c., contaminated with gonorrhœal discharge to children and others who may handle them.

I shall now, sir, with your permission, proceed to demonstrate some of the characters of the microbes that I have mentioned in this paper.

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The President said that he hoped Dr. Robinson's very interesting paper would not be allowed to pass without remark. It was valuable as a summary of the present state of know-

ledge of a subject which most of us have to take second-hand. One fact, with regard to the comparative impermeability of the decidua to micro-organisms, struck him as being important practically. It might not always be safe to curette the uterus when its contents were septic. In one such case within his own knowledge infection seemed to follow curetting, with a fatal result.

Dr. Roberts said that he was much interested in Dr. Robinson's remarks upon the relation of phlegmasia dolens to the septic processes and to Widal's researches as quoted by Dr. Robinson, as Dr. Roberts had in a former paper read before this Society (to which Dr. Robinson referred) stated that some forms of "white leg" were certainly septic. Dr. Roberts asked Dr. Robinson if he could tell the exact clinical appearances of the white legs referred to as to their local conditions and colour, as it was an important point, as Dr. Roberts believed that the term phlegmasia included many forms of white leg, and that the definite white brawny legs were generally septic with a very early onset of symptoms, and often with distinctive pelvic signs (parametritis, &c.), while the commoner thrombotic leg came on generally later, ten to twelve days. Dr. Roberts said that he believed that high temperature need not necessarily mean sepsis; he also asked Dr. Robinson if anything was known of cultivations of the micro-organisms found in these white brawny legs, particularly from the cellular tissues, and was the *Streptococcus pyogenes* invariably found. With regard to the *Bacillus coli-communis*, Dr. Roberts asked if such micro-organism was the possible cause of the inflammation of such things as ovarian tumours, fibroids, or extra-uterine sacs, as it did not seem in many cases due simply to twisting of the pedicle and strangulation. Was it possible that in such conditions, owing to the lowered vitality of these tissues due to strangulation, organisms which before were innocuous, now attacked them from adjacent intestine? Dr. Roberts thought as to vaginal tubes possibly infecting a woman late in the puerperium explaining the late onset of the symptoms in phlegmasia, they might be explained rather by the clot from the uterine veins not reaching the iliac or femoral till, say, the tenth to twentieth day. In the President's remarks Dr. Roberts understood that the streptococcus as described by Dr. Robinson was the only organism which had the power of penetrating the deeper layers of the uterus and infecting the lymphatics. Was this so? If so, in septic cases surely its removal from the superficial endometrium early by curetting should be attempted in such cases, of course with all due care not to cause any severer injury combined with the antiseptic treatment of the uterine cavity.

Dr. McCann said he was interested in that portion of Dr.

Robinson's paper which related to the gonococcus. For two years he had been working at this subject, and hoped to be able to lay before the Society during the winter the results obtained. He commented on the difficulties experienced in the cultivation of the gonococcus owing to its being so rapidly overgrown by other pus organisms.

Dr. Robinson, in reply, agreed that the use of a septic douching apparatus might perhaps in some cases be the cause of a septic phlegmasia dolens in a puerperal woman. He was unable to give any information as to the colour of the skin in those fatal cases of phlegmasia dolens in which the *Streptococcus pyogenes* had been found in the clots and walls of the obstructed veins, since this point had not been noted in the report. He thought that culture experiments on living patients suffering from phlegmasia dolens would be of no value, since it had been demonstrated that the secondary clots in the affected limbs rarely contained streptococci even in those fatal cases of the disease in which numerous organisms were found in the primary clots and walls of the vessels in the uterus and broad ligaments. He had experienced the usual difficulties in separating the gonococcus from the other microbes contained in gonorrhœal pus. According to his experience, the best method of doing this was by making plate cultures with a mixture of blood-serum (human, ox, or horse) and agar-agar in the manner recommended by Wertheim and others. The organisms he had shown (microscopically and in culture) had been thus separated from gonorrhœal pus, and presented all the characters of growth, form, and reaction to staining reagents which were known to be peculiar to the gonococcus.

NOVEMBER 6TH, 1895.

F. H. CHAMPNEYS, M.A., M.D., President, in the Chair.

Present—53 Fellows and 5 visitors.

Books were presented by Dr. Cullingworth, the Royal Medical and Chirurgical Society, Guy's Hospital Staff, and the Council of University College, London.

R. C. Priestley, M.A., M.B.Cantab., was admitted a Fellow of the Society.

The following gentlemen were elected Fellows:—Stanlake James, L.R.C.P.; Wilfred Newell Soden, M.B.Lond.; J. Prichard Roberts, L.R.C.P.I. (Harrogate).

SOLID TUMOUR.

Shown by LEITH NAPIER, M.D.

A COMMITTEE was appointed, consisting of Drs. Leith Napier, Griffith, Cullingworth, and Mr. Doran, to examine and report on this specimen.

NECROTIC CHANGE IN A SMALL UTERINE MYOMA OCCURRING IN A YOUNG SUBJECT.

Shown by Chas. J. Cullingworth, M.D.

The specimen shown consisted of the uterus and appendages successfully removed, a fortnight previously, by abdominal hysterectomy from a single woman aged twenty-nine, on account of a myoma of the anterior uterine wall. The patient was a nurse, and had for several months been incapacitated for her work owing to attacks of pain in the lower part of the abdomen and increasing menorrhagia.

The menorrhagia had begun about five years ago, but the pain and swelling had been felt only during the latter half of that period. At Easter of the present year the pain had been of such severity and persistence as to necessitate the patient's confinement to bed for ten days.

On admission to St. Thomas's Hospital a well-defined round swelling, equal in size to that of an ordinary orange, and of a consistence resembling that of a sebaceous cyst, was felt immediately above the pubes and a little to the right. Bimanual examination showed it to be inseparable from the uterus, the canal of which, slightly elongated, lay behind it. The patient's general condition was good, and there was no increase of temperature or other sign of fever.

The diagnosis lay between a dermoid of the right ovary adherent to the front of the uterus, or a soft myoma in the anterior uterine wall.

When the abdomen was opened the tumour was found to be uterine. There were no adhesions or other evidences of peritonitis. The appendages of both sides were healthy. The uterus and appendages having been removed by supra-vaginal hysterectomy, the tumour was found to be round in shape, and to project into the uterine cavity,

though to a much less extent than towards the peritoneal surface. Its diameter was $2\frac{3}{4}$ inches. On section the central portions of the tumour were found to be soft and diffluent. The softening was not uniform, but occurred in patches. On removing the pultaceous material the cavities left were seen to have ragged and extremely irregular walls. There was no ill odour, and the surrounding tissue of the uterine wall was of healthy appearance.

The tumour appeared to be undergoing necrosis without septic change.

The points of interest in the case were (1) the difficulty of diagnosis owing to the unusual softness of the tumour; (2) the occurrence of necrotic change in a comparatively small tumour, situated where there was no exposure to injurious pressure or risk of infection from adjacent intestine, and in a patient who was under thirty, and was otherwise in good health; and (3) the illustration that the case afforded of the importance that ought always to be attached to persistent attacks of pain in a uterine myoma, as indicating the possibility of serious degenerative change in the substance of the growth.

Dr. Routh would speak upon the question of the diagnosis. Dr. Cullingworth had stated that the upper part of this tumour contained *pultaceous* matter, which probably accounted for a certain amount of the elasticity felt, but Dr. Cullingworth had not stated the quantity thereof. He also wished to know if Dr. Cullingworth had used the *stethoscopic test.* It was well known that when a tumour existed in the abdomen you could thereby distinguish between a multilocular or unilocular cyst or a fibro-myoma. When you listened over the tumour and percussed with the finger over different parts of the tumour, if the tumour was unilocular the note produced would be the same all over the tumour; if multilocular, a different note in pitch would be produced over each part percussed. Fluids will, moreover, not transmit the double cardiac sounds from the aorta. But if the tumour be solid or a fibroid, it will transmit the double aortic cardiac sound, and possibly a murmur as heard generally over fibroids. That very day he (Dr. Routh) had had a case which required this stethoscopic test. There was an abdominal tumour. To the feel it was somewhat elastic, and yet very

hard. No cardiac sounds were transmitted, but, strange to say, the pitch of the note produced, as heard through the stethoscope, varied. *Per vaginam* it gave all the evidences of a hard solid tumour, the os was pushed to one side, and uterus low down, but with the *vaginoscope* the double cardiac sound was heard. He concluded, therefore, the tumour was probably fibro-cystic superiorly, but solid below.

In answer to Dr. Routh, Dr. Cullingworth was obliged to confess that he had not employed auscultation *per vaginam* in his examination of the tumour, and was indeed unaware of the diagnostic value of that mode of examination.

ŒDEMATOUS FIBROID TUMOUR OF UTERUS ASSOCIATED WITH PREGNANCY.

Shown by A. L. Galabin, M.D.

Dr. Galabin showed a specimen of œdematous fibroid tumour of uterus associated with pregnancy, which had simulated an ovarian cyst. The patient was four and a half months pregnant. Two tumours were felt in the abdomen; that on the left side was diagnosed as the fundus uteri containing the fœtus. A very loud souffle was heard over it. That on the right side was about double the size of the other and much softer. Fluctuation and slight fluid thrill were felt over it. It was generally silent to auscultation, but once a very faint souffle was heard over it. The question was discussed whether this proved it to be uterine, or whether it was only transmitted from the very loud souffle near at hand. The diagnosis was considered doubtful, but rather in favour of ovarian tumour. Under observation the size of the tumour doubled in three weeks.

It was decided to operate, partly because the tumour might be ovarian, and partly because the lower segment of it could be felt from the pelvis at the brim, displacing the cervix to the left, and was likely to obstruct labour. The uterus and tumours were removed by Baer's method of

hysterectomy, the pedicle being dropped. The tumour proved to be an œdematous fibroid, not even fibro-cystic. It occupied the front wall of the uterus, the cavity containing the fœtus lying behind; but the uterus was rotated through a right angle to the right, so as to bring the tumour to the right side. The placenta was attached to the lower half of the uterine cavity, its edge coming so near to the internal os that it might have appeared as a marginal placenta prævia in labour. The patient had had hæmorrhage in the third month of pregnancy.

The patient recovered rapidly, and with as little disturbance as possible after an easy ovariotomy. It proved even more easy than usual to secure the arteries and arrest hæmorrhage. Dr. Galabin did not know whether Baer's operation had ever been adopted at the full term of pregnancy as an alternative to Porro's operation, but from the experience of this case he thought it would answer satisfactorily.

TUBAL GESTATION.

Shown by Leonard Remfry, M.D.

The specimen consisted of a distended tube, showing the amniotic cavity and the embryo attached by its umbilical cord. The patient from whom this had been removed gave the following history:—She had had three pregnancies, the first terminating in miscarriage, the last two in full-time labours. Her last child was born three and a half years ago. She menstruated at the end of July as usual, but did not see anything again till September 22nd, when she began to have great pain in the lower abdomen, and also some uterine hæmorrhage. The pain and hæmorrhage were more or less continuous till October 30th, when she was seen by Dr. Remfry. There was no history of passing decidua.

On examination the uterus was in the middle line, somewhat enlarged, retroverted, and fixed to the sacrum. Lying in front of it was a kidney-shaped mass, which appeared to commence behind at the right cornu of the uterus, and passing downwards and forwards across the supra-vaginal cervix, to become lost about the middle of the left border of the fundus. The mass was moveable over the uterus. This condition, added to the history, even without any signs of pregnancy, pointed to extra-uterine gestation.

On opening the abdomen a small amount of dark blood escaped, which was afterwards found to be due to leakage from the inner end of the sac. The distended tube was mottled on its surface, showing that degenerative changes had taken place, and its consistence was in parts hard and in parts elastic. There were many adhesions, and Douglas's pouch was shut off from the right side of the pelvis. The tumour was removed and a pedicle made close to the uterine cornu. The peritoneal cavity was washed out with hot water and then sponged dry. The patient is doing very well.

The meeting then proceeded to the consideration of the revised laws in Chapter VI, as recommended by the Council, and after considerable discussion the following were adopted :

Clauses 1, 2, 3, 4, and 5 were agreed to.

Clause 6 : an amendment was proposed by Dr. Fenton, seconded by Mr. Malcolm, and carried, that the words "or the Fellow presiding in his stead" be added after the word "President" in the last line but one.

Clause 7 : it was proposed by Dr. Cullingworth, and carried, that Clause 7 read as follows :—"Every Fellow shall be entitled to vote either in person at the Annual Meeting or by voting paper sent in to the President

previous to the Annual Meeting as hereinafter set forth."

Clause 8 to read "Every Fellow voting at the Annual Meeting shall erase superfluous names from his balloting list, leaving not more than the number of names required, and shall fold it up and deliver it to the scrutineers."

Clause 9: it was proposed by Dr. Boxall, seconded by Dr. Heywood Smith, and carried, that this clause read as follows as regards its first sentence:—"Every Fellow of the Society voting *in absentiâ* shall sign and return the balloting list (duly filled up in the manner specified in Section 8) under cover to the President not later than the day before the Annual Meeting."

It was proposed by Mr. Bland Sutton, seconded by Dr. Travers, and carried, that the second sentence read as follows:

"The voting papers received by the President shall be put into the ballot box at the Annual Meeting, and be examined by the scrutiners."

Clauses 9 and 10 become 10 and 11 respectively without any alteration.

DECEMBER 4TH, 1895.

F. H. CHAMPNEYS, M.A., M.D., President, in the Chair.

Present—47 Fellows and 2 visitors.

Books were presented by Dr. Cullingworth, the Clinical Society, the Edinburgh Obstetrical Society, Professor Frommel, the Gesellschaft für Natur- und Heilkunde in Dresden, and Professor Sneguireff.

The following gentlemen were proposed for election :—John Lewis Brown, M.B., C.M.Edin.; Walter Sidney Sheppard, B.A., M.B.; John Bradbury Winter, L.R.C.P.(Brighton); R. T. Nariman, M.D.Brux. (Bombay); Charles Atkin Swan, M.B., B.Ch.Oxon.

DOUBLE PYOSALPINX SIMULATING EXTRA-UTERINE PREGNANCY; REMOVAL; RECOVERY.

Shown by WILLIAM DUNCAN, M.D.

THE patient from whom the specimen was removed is a lady aged 31, who has had two children, aged five and three and a half years; no miscarriages. In October, 1894, she consulted a physician who said she had enlargement of the left Fallopian tube with endometritis, but in May, 1895, the condition was reported as cured.

Had a period from May 27th to June 1st. On July 1st began to feel pains in pelvis, and had a little diarrhœa. On July 3rd whilst walking down a hill had sudden severe pelvic pain with faintness. On July 11th the "period" came on (fourteen days late), and continued with clots and much pain for seven days. There were attacks of vomiting accompanied by severe paroxysmal pains, which shot through the pelvis and down the right thigh.

Vaginal examination on August 1st showed cervix swollen, œdematous, and low in pelvis. Uterus somewhat enlarged and pushed to right side by an elastic softish and very tender swelling in the left broad ligament: pressure on this caused immediate vomiting. There was also some swelling, ill-defined on the right side.

Dr. Duncan saw the patient on August 17th, confirmed the presence of the above signs, diagnosed extra-uterine pregnancy, and advised that abdominal section should be performed without delay. Dr. King of Ludlow, Shropshire, under whose care the patient was, brought her to London, and Dr. Duncan operated on the 19th, with the kind help of Mr. Bland Sutton. On opening the abdomen the uterus was found to be enlarged to the size of a three months gestation; to its left was seen the distended left tube filling up the left side of the pelvis and universally adherent; the adhesions were broken down, and the ovary and tube removed in the usual way. The right tube was also found to be distended to the size of a sausage and fixed by adhesions: whilst the latter were being broken down the tube ruptured, and about an ounce of pus escaped into the pelvic cavity. After the tube and ovary were removed, the abdomen was thoroughly flushed out with boiled water, a drainage-tube inserted, and the incision closed in the ordinary manner.

The tube was removed after twenty-four hours. Abortion took place on the third day, but the patient made a complete recovery.

Dr. Duncan.—The history and physical signs were very much like those of extra-uterine pregnancy; the most remarkable fact in the case, however, is, the patient was able to become pregnant with both Fallopian tubes blocked and containing pus.

Dr. Heywood Smith asked, with reference to Dr. Duncan's second case, what indications existed of pregnancy, and whether in either of his cases there were any mammary signs.

Dr. Amand Routh recognised Dr. Duncan's case as one who had previously been attended by him, and had come under Dr. Duncan's care during Dr. Routh's absence from London. For two or three years she had had endometritis and salpingitis. The left tube was large and tender, and the right distinctly swollen as far back as October, 1893. In May, 1895, she was feeling well, with no pelvic pain, the right tube was not palpable, and the left only slightly so. Treatment had been directed to the endometrium. It was probable that pregnancy supervened upon her improved state, and that acute salpingitis followed conception owing to drainage from the tube being arrested.

Dr. Maclean stated, respecting the appendages exhibited by Dr. William Duncan, that whilst, on the one side, the tube was so far disorganised by suppurative salpingitis as to exclude the possibility of its being the means of intra-uterine conduct for the ovum, on the other side there was a condition of triloculated pyosalpinx, the loculi intercommunicating by small apertures detected on carefully passing a probe; there was no fimbrial involution; the fimbriæ dipped into a marble-sized cyst filled with fluid blood, with no characters to negative the assumption of its being follicular. A short distance from this follicle there was a well-developed corpus luteum. There was no apparent reason to regard the condition as of tubercular origin. The specimen was referred to a sub-committee (consisting of Drs. Griffith, Maclean, and Duncan) for examination and report.

Report on specimens obtained by abdominal section in a case of bilateral pyosalpinx co-existing with early intra-uterine pregnancy, exhibited by Dr. W. Duncan at the October, 1895, meeting of the Obstetrical Society.

Naked-eye examination.—Right appendages: ragged adhesion sites are general. *Tubes:* 12 cm. in length, legume-shaped, increasing in diameter from within out-

wards. On longitudinal section pus escapes from all parts of the tube; the walls generally are thickened, and two main septa traverse the lumen, thus rendering the condition a triloculated pyosalpinx. The septa, however, are not complete; a probe may be passed through communicating fenestræ between the three loculi. The proximal end of the tube is also permeable by a bristle. The mucosal ridges are, in the main, exuberant, and in each loculus have a whorled arrangement. The outer end of the tube is merged by inflammatory adhesion with the outer end of the ovary on its inferior or anterior aspect, and here the neatly packed, unmatted fimbriæ dip into a cavity of marble size, containing recently effused blood. The cavity is clearly formed by the tubal and ovarian fusion. After the dissection necessary to expose the fimbriæ a probe is readily passable through the fringed ostium into the outermost loculus of the tube. A sessile thin-walled cyst of pea size, containing straw-coloured fluid, springs from the anterior surface of the tube near to its outer end. The tubal closure has been effected by adhesive perimetritis with the salpingitis. The *ovary* is flattened in shape, and measures 6 × 4 × 2 cm. The capsule is thickened, and longitudinal section shows a somewhat dense corpus luteum of oval shape 1 × 2 cm. This is, presumably, the corpus luteum of the pregnancy. The ovarian tissue generally appears healthy. The *mesosalpinx* is thickened and almost obliterated.

The *left appendages* show much adhesion, shredding, and are disorganised by the inflammatory process. The *tube* has been torn by the operative manipulation. It is 8 cm. in length, and contained pus; the walls are much thickened, and the fimbrial end is sealed, the fimbriæ being matted and partially atrophied. The mucosa is at some parts atrophied, at others redundant. The *ovary* is flattened, and measures 7 × 6 × 1½ cm.; the capsule is thickened, and on section a few small follicles are seen. There is much stromal ecchymosis. The *mesosalpinx* is obliterated.

Microscopic examination shows marked hyperplasia of all the coats and their elements. The mucosal ridges show the changes characteristic of intense salpingitis, some of them being completely disorganised. Between them, at many points, may be seen inflammatory effusion, the leucocytes being strongly stained. Whilst the summits of many of the larger folds of the mucosa are denuded of epithelium, the intervening crypts are well clothed with tall ciliated cells, and in most of the smaller folds the epithelial lining is perfect.

Remarks.—The appearances of the specimens suggest that the salpingitis and perimetritis have for a considerable time antedated the conception. Their common result, sterility, has been avoided by the relation of the fimbrial end of the right tube with its corresponding ovary. This relation has allowed of the entrance of an ovum into the tube, which was subsequently impregnated. This assumes that the right tube, though the site of inflammation, was still capable of oval conduct. The exit of the salpingitic discharges being closed by the intra-uterine development of the ovum, the tubes became distended and their contents purulent.

William Duncan.
Walter S. A. Griffith.
Ewen J. Maclean.

A SUPPOSED CASE OF TUBO-OVARIAN CYST.

Shown by Charles J. Cullingworth, M.D.

A committee, consisting of Messrs. A. Doran and J. Bland Sutton, and Drs. Griffith and Cullingworth, was appointed to examine and report upon this specimen.

ON A CASE OF TUBO-UTERINE PREGNANCY; PRIMARY INTRA-PERITONEAL RUPTURE; RECOVERY.

By J. Bland Sutton, F.R.C.S.,
ASSISTANT SURGEON TO THE MIDDLESEX HOSPITAL.

(Received August 26th, 1895.)

When an oosperm (fertilised ovum) lodges in that section of the Fallopian tube which traverses the uterine wall and develops, it gives rise to what is known as tubo-uterine pregnancy (the interstitial pregnancy of other writers).

The separation of this variety from the purely tubal form is not merely due to position, but is demanded on account of the difference in its modes of termination. The purely tubal pregnancy may abort or the gestation sac may rupture. In the latter condition the sac may burst into the cœlom (peritoneal cavity) or into the mesometrium.

In tubo-uterine pregnancy (a very rare condition) the gestation sac may burst into the uterine cavity and be discharged like an ordinary uterine conception. Of this mode of termination I have not as yet met with an unequivocal case. More frequently it bursts into the cœlom (peritoneal cavity), and an examination of the clinical details of cases of undoubted tubo-uterine gestation indicates that primary intra-peritoneal rupture of the gestation sac is attended with great hæmorrhage, and is far more rapidly fatal than the purely tubal form.

Until I encountered the case the subject of this communication my knowledge of tubo-uterine pregnancy rested on the study of museum preparations, with the exception of one exhibited as a fresh specimen at this

Society. On pondering over the clinical features of such cases, I have often wondered how I would deal with the gutter-like rent running in the track of the tube and involving the thick wall of the uterine fundus.

On the evening of July 1st, 1895, Dr. Washington Isaac asked me to see a patient suffering from some acute abdominal lesion, the symptoms pointing to perforation of a gastric ulcer.

The patient was twenty-two years of age, and had been married two and a half years, and had not been pregnant. Menstruation had always been capricious in time and in quantity, and on the present occasion was fourteen days overdue. On the preceding night she had been seized with severe pain in the belly, and had kept her bed. Opium pills, four in all, had been given at intervals. A few hours before my visit she was seized suddenly with "awful pain in the belly," and vomited some ten ounces of fluid and the four opium pills. I found her blanched, the pulse small but easily counted, and the voice weak; the belly was flat, nowhere abnormally dull, and the liver dulness of normal extent. She had no especial tenderness in the epigastric region, but great tenderness below the navel. The breasts furnished no indications of pregnancy. On vaginal examination the cervix felt soft, the uterus enlarged but moveable, and movement provoked great pain.

The vomiting, absence of tympanites, and non-obliteration of "liver dulness" negatived perforation of the stomach. The predominance of the pelvic signs led me to believe that there was internal bleeding, probably due to rupture of a gravid tube.

It was explained to the husband that there was some serious abdominal lesion, and that his wife was, as far as human beings could determine the question, bleeding to death. He without any hesitation gave us a free hand.

Two hours later I incised the abdominal wall, evacuated a large quantity of blood, and on raising the uterus detected a rent at the right angle of the uterus, from which

bright arterial blood was issuing at several points. This oozing surface was clamped and transfixed with a double silk ligature, and the tube with the ovary cut away. On relaxing the uterus it was clear that the ligature did not command the bleeding, and to effect this I found it necessary to pass a second ligature through the substance of the uterus. The pelvic and iliac fossæ were carefully and thoroughly sponged, the wound secured and dressed, and the patient put to bed. Enemata of beef tea and brandy, or milk and brandy, were given every hour for twelve hours.

During the seventy hours succeeding the operation the chief trouble was simple regurgitant vomiting, and a gradual rise of temperature until 103° F. (39·44 C.) was reached. Under ordinary circumstances this would have been alarming, but in the course of the operation I was astonished at the bigness of the uterus ; its size was such that the fundus reached above the level of the pubes. On returning the patient to bed I explained to Dr. Isaac that this uterus contained an unusually large decidua, and very probably its expulsion would be attended with more than the usual disturbance. This forecast was realised.

The vomiting was not that characteristic of peritonitis, but a simple, almost effortless regurgitation of gastric fluid unmixed with bile. Twenty-four hours after the operation uterine bleeding set in ; then shreds of decidua began to escape. On the third day vomiting ceased, the temperature declined, and analepsis was all that could be desired, thanks to Dr. Isaac's unremitting interest and care.

I deem it useful to record this case, for so far as my reading goes this is the first recorded example of primary rupture of the sac of a tubo-uterine gestation treated by a surgical operation. As a rule, when the sac bursts the bleeding is so rapidly fatal that the patient passes beyond the reach of surgical art before the nature of the case is realised.

I deeply regret my inability to place before the Society the usual proofs of tubal pregnancy ; no embryo or tubal

mole came to hand, and the effused blood was only imperfectly examined. The demands on my energy during the operation were such that the surgical side of my nature was bound to dominate the pathological, and many clots of blood were lost. The very valuable chorionic villi cannot be put in as evidence because I was obliged to utilise the gestation sac for a pedicle.

The belief that this was a pregnancy rests on the circumstance that the only known cause of such a rent in a Fallopian tube is the bursting of a gestation sac—a view strongly supported by the fact that the uterus contained a thick decidua. The conclusion that the terrible danger in which this woman was placed depended on the bursting of a gestation sac rests on circumstantial evidence, but it is so strong that it may be regarded as conclusive.

Mr. Alban Doran considered that Mr. Sutton had shown that the treatment of a ruptured interstitial pregnancy was relatively simple, though the danger was usually extreme. Amputation of the uterus was the course which had so often been recommended on purely theoretical grounds, but Dr. Dunning ('Amer. Gyn. and Obstet. Journ.,' November, 1895) recently lost a case of this kind during operation. In his report he very properly dwells on the danger of performing hysterectomy on a patient already in a profound state of shock. In regard to the decidua, Pilliet ('Annales de Gynéc. et d'Obstét.,' October, 1895) had shown that so far from it being ill-developed in ectopic gestation, it was particularly well-formed and bulky. This fact must be remembered in association with the theory that the fœtus was relatively ill-developed.

Dr. Peter Horrocks asked if the size of the uterus had been measured or estimated in any way. It was stated that it was "enlarged," and that it rose above the symphysis pubis. The latter remark was not of much value because the virgin uterus rose above the symphysis in a natural condition, and according to observations by sections of frozen bodies, probably even above the plane of the pelvic brim, which was a very different thing from the level of the top of the symphysis pubis. Still as a fact the uterus was enlarged, although, assuming this to be a case of extra-uterine gestation, it was probably very little advanced in pregnancy. The patient had gone only one week beyond the menstrual period. Still he considered this cessation of menstruation, although only a week beyond the

time, in a woman previously regular, combined with this enlargement of the uterus, were two facts helping to prove that this was in reality a case of gestation. In a previous discussion he had pointed out that the uterus continued to enlarge in extra-uterine gestation as long as the fœtus lived. Since then he had been investigating the matter as far as he could in cases which had come under his observation, with this result, that in cases of extra-uterine gestation the uterus begins to grow in size just in the same way that it does in intra-uterine gestation. According to books it grows actually faster in the earlier months. This he had not been able to confirm. It grew just as fast, and if the embryo lived it went on growing, and did not stop at the end of a few months. Again, if the fœtus died, involution of the uterus commenced, and was completed unless prevented by complications such as would cause subinvolution ordinarily. Hence in any given case the size of the uterus was a most important factor in the diagnosis. If the uterus were not enlarged, one could say that either the case was not extra-uterine gestation at all, or if it were the fœtus was dead, and had been dead long enough to have allowed involution to be completed. Of course it was to be remembered that the uterus was not as great absolutely as in intra-uterine pregnancy; what was meant was that at any given date of pregnancy the uterus was as great in extra-uterine as in intra-uterine, when in the latter case the uterus had been emptied of its contents. He asked also whether the rupture in this case had taken place through the substance of the wall of the uterus or close to the edge where the Fallopian tube emerges.

Dr. Boxall inquired if, apart from the absence of menstruation for six weeks, there existed any evidence—*e. g.* morning sickness—of pregnancy having exceeded that duration; and also if Mr. Sutton, from a comparison with the character of previous periods, was disposed to regard the last flow prior to the operation as a regular period, or as a hæmorrhage accompanying the abnormal gestation and symptomatic of it.

A CASE OF UTERUS DIDELPHYS, WITH OBSERVATIONS ON THE CLINICAL IMPORTANCE OF THIS MALFORMATION.

By Arthur Giles, M.D., B.Sc., M.R.C.P.,
Physician to Out-patients, Chelsea Hospital for Women.

(Received September 26th, 1895.)

(*Abstract.*)

The author recalls the three principal types of double uterus, viz. u. septus, u. bicornis, and u. didelphys; a description of these is given, with outline figures. He next describes his case, observed at the Middlesex Hospital. The patient complained of a protrusion from the vagina; this was found to be the remains of the vaginal septum. Under ether the exact condition was ascertained; it is illustrated by a drawing.

Of uterus didelphys in general.—The author discusses the clinical features of the condition, as illustrated by recorded cases. Abstracts of these are given, under five headings:

1. Cases of unilateral atresia with retained menstrual products, 5 cases.
2. Pregnancy in one half of the uterus, 8 cases.
3. Simultaneous pregnancy in both halves, 2 cases.
4. Cases uncomplicated by atresia or pregnancy, 6 cases.

These twenty-one cases (including the author's) are all that he can find recorded during the last twenty-five years, as occurring in living adults. (See postscript.)

5. Cases discovered on the post-mortem table, 4 cases.

A table is given of the twenty-one clinical cases, illustrating the following points:

1. Age. Most of the patients were under thirty.

2. Marriage. Fifteen were married; in two there was dyspareunia.

3. Parity. Pregnancy occurred in fourteen of the fifteen married cases; eleven had borne children, and three had miscarried. Among the eleven, sixteen labours occurred, of which ten were natural. The six cases of dystocia were as follows: obstruction to labour by the empty retroverted half, 3 cases; obstruction by the vaginal septum, 1 case; forceps, 2 cases.

4. In four cases the two halves were of equal size; the right was the larger in six, and the left in eleven.

5. In only one case the vagina was originally single; in six there was atresia of one half; in the remainder the two vaginæ were patent and separate.

6. Menstruation was slightly delayed; it occurred—

At 14 in 3 cases.	At 16 in 4 cases.	At 18 in 1 case.
At 15 in 4 cases.	At 17 in 1 case.	At 26 in 1 case.

It was regular in twelve out of sixteen recorded cases, and painless in twelve out of fifteen.

In one case the two halves menstruated separately. In the eight cases of single pregnancy there is mention in four of a decidua in the non-gravid half.

The clinical complications that may arise are—

1. Unilateral atresia, with retained menstrual products.
2. Dyspareunia.
3. Double vaginitis or endometritis, unsuccessfully treated by application to one half only.
4. Obstruction to labour by the retroverted non-gravid half.
5. Obstruction due to the vaginal septum.
6. Retained and undiscovered products of conception in one half, in cases of double pregnancy.

A bibliography is appended.

P.S.—Two recently published cases are also given, which were met with after the paper had been sent in to the secretaries.

The occurrence of uterus didelphys, and its clinical recognition in a living adult, are so rare that I feel I need make no apology for recording this case.

Kussmaul, in his classical work on malformations of the

uterus (1),* written in 1859, stated that the uterus didelphys had been seen only in cases of stillborn children, where it was associated with other deformities, especially atresia ani. Fraenkel (3), writing in 1873, referred to the cases of Ollivier and Bonnet as the only two observed in adults.

During the last twenty-five years about twenty authentic cases have been reported, some verified by autopsy. To these I shall refer later.

A few preliminary observations on the nature of this malformation are rendered necessary by the vague way in which some cases are described.

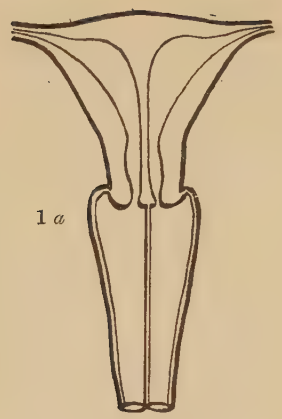
There are three types of the condition known as double uterus, viz. the uterus septus, the uterus bicornis, and the uterus didelphys. The primary feature, embryologically, is the non-union of Müller's ducts, by which union the uterus and vagina are normally formed.

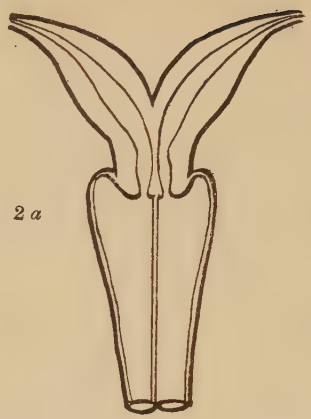
1. In the *uterus septus* the ducts have fused externally, but the septum formed by their approximation persists; consequently the uterus seen from the outside appears normal. On section it is found to contain two distinct cavities. The septum may extend to the vulva, producing a vagina with the appearance of a double-barrelled gun; or it may involve the uterus alone, the vagina being single; or it may fail to reach the external os, in which case the cervix looks normal when seen through a speculum. This is the *uterus subseptus.*

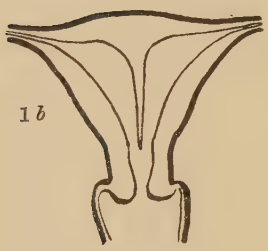
2. In the *uterus bicornis* external union has occurred in the lower part of the uterine body, but is wanting in the upper part; so that when such a case is bimanually examined, the depression between the two halves of the fundus is plainly felt. Here also the extent of the septum varies, reaching to the vulva, to the os externum, or to the os internum only. The last kind gives the variety known as *uterus bicornis unicollis.* If one side fails to develop we have the *uterus unicornis.*

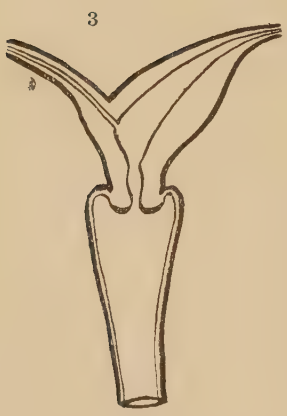
3. In *uterus didelphys* the two halves of the uterus

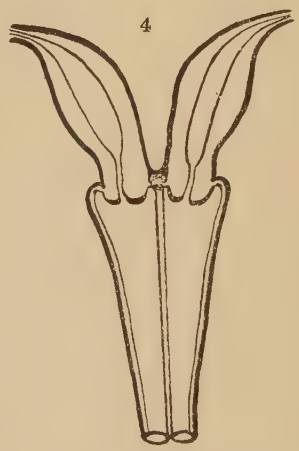
* The numbers refer to the bibliography at the end of the paper.











1 *a*. Uterus septus.
1 *b*. „ subseptus.
3 „ unicornis.

2 *a*. Uterus bicornis.
2 *b*. „ „ unicollis.
4 „ didelphys.

have remained externally distinct, and can be moved independently of one another. The vaginæ are invariably separate, though united by connective tissue, and a loose bridge of connective tissue and peritoneum stetches between the cervices.

Each uterus has its own Fallopian tube, whose point of junction with uterine body is indicated by the origin of the round ligament; it has also its own ovary.

The two halves are often unequally developed, and one vagina may end blindly above the vulva, so that the corresponding uterus is quite shut off from the outside.

The accompanying outline diagrams illustrate these different types.

I pass on to the description of my case.

While I was in temporary charge of the Obstetrical Department of the Middlesex Hospital, during the absence of Drs. Duncan and Boxall, a patient was admitted to Prudhoe Ward on August 17th, 1895, complaining of great inconvenience from something protruding from the vagina. For the notes that follow I am indebted to Mr. W. S. West, obstetric house physician.

E. M—, aged 31, married. Menstruation began at sixteen, lasting three to four days, recurring regularly every four weeks. Quantity moderate; periods unaccompanied by pain, except during the last six months.

She was married at twenty-four. Six months later she miscarried at three and a half months. Two and a half months later—that is, four years ago—she was delivered at term of a female child, who is now alive and healthy. She has been "regular" since the birth of the child. The labour appears to have been perfectly natural.

Present illness.—After her confinement patient began to suffer from bearing-down pains in the front passage, and at the same time she noticed some protrusion externally, which did not disappear on lying down. The inconvenience had been greater during the last eight months.

State on admission.—Patient is a well-grown woman, rather thin; hair auburn, eyes of a tawny hazel colour. There is a considerable growth of hair on the face.

Vaginal examination.—The perinæum appears deficient anteriorly; a fleshy tag hangs out from the vulva, occupying the position of a rectocele. The rectum does not, however, bulge into it, and it is found that the tag is the lower end of a prominent narrow ridge, extending the whole length of the posterior vaginal wall along the line of the median raphe. The os is felt elongated transversely: to its right is a kind of ridge. The cervix is almost flush with the vaginal fornix.

It was decided to remove the ridge by a plastic operation.

Under ether a more careful and exact examination was made. The ridge was then found to project about three quarters of an inch inferiorly, diminishing in height as it extended up the vagina. About three inches from the vulva it was almost lost, but began again as a thin projection extending across the vaginal roof, a little to the right of the middle line and continuous with a less marked ridge along the anterior wall in the situation of the urethra, the anterior and posterior projections almost meeting. On passing an Auvard's speculum the cervix, with parous os transversely elongated and somewhat patulous, was seen to the left of the projection from the vaginal roof, whilst to the right of this was a second cervix with nulliparous os, small and round. The sound passed easily into each os for two and a half inches on the right side and two and three quarters inches on the left. The two cavities were separate and divergent, the sound in each half pointing to the corresponding side of the pelvic brim.

By combined rectal, vaginal, and abdominal examination it could be easily felt that there were two separate and distinct uterine bodies, independently moveable: the rectal and abdominal fingers could be made to meet down

Adlard, Imp.

to the level of the ora externa. The ovaries were felt lying laterally and of normal size.

The accompanying drawing (Pl. II) represents the condition of the vagina and cervices as seen by the vagina, and of the uterine bodies as felt bimanually.

The ridge on the posterior wall was evidently the remains of the vaginal septum, which had probably been broken down at the time of delivery.

Several colleagues and others present at the examination confirmed the description of this condition.

The small operation was then proceeded with. The fleshy ridge was excised by means of an incision on each side along its base, and the edges of the mucous membrane were brought together by means of a continuous catgut suture.

On the eighth day the suture was found to have come away, and the wound was quite healed. On the next day the patient left the hospital.

This case is specially interesting for two reasons. Firstly, she had been confined four years ago, and the labour evidently proceeded so far normally as to call no attention to the malformation; but we may note that it was probably during labour that the vaginal septum became torn through, for it was only after this time that the remains of the septum began to protrude through the vulva and cause inconvenience. The second point of interest is that the condition was diagnosed during life, and accidentally. There are only five corresponding cases recorded. To these I shall return.

Of Uterus Didelphys in General.

Viewed from the standpoint of development these cases have an intrinsic interest. The malformation is due to the non-union of the two primitive Müllerian ducts. Normally these ducts join and fuse, to form the uterus and vagina, during the third month of fœtal life, so that

the cause of non-union must be operative in these cases at or before this time. The production of a uterus septus, bicornis, or didelphys is probably due to variations in degree rather than in kind among the forces that produce the deformity. There is sometimes found in post-mortem specimens a well-defined peritoneal fold, the recto-vesical ligament passing between the two halves. To this has been attributed a *rôle* in the production of the deformity, but it may quite well be a consequence rather than a cause of non-union. What the actual cause is must remain conjectural.

The ætiology of uterus didelphys, from the teaching of development, is dwelt upon at length by Kussmaul (1), Müller (5), and others. To these works I would refer those interested in the subject, as I wish here to rather consider its clinical aspects. For this purpose I shall give an abstract of all the cases among adults which I have been able to find, dividing them into five groups:

1. Cases of hæmatometra or pyometra in one half—five cases.
2. Cases of labour, gestation occurring in one half—eight cases.
3. Cases of gestation occurring simultaneously in both halves—two cases.
4. Cases uncomplicated by gestation or retained menstrual products—six cases.
5. Cases discovered on the post-mortem table—four cases.

Group I.—*Hæmatometra or Pyometra in One Half of a Uterus Didelphys.*

1. *Staude's case* (6).—The patient came under treatment for a tumour on the right side of the pelvis. It pressed the uterus to the left, and being closely connected with the right side of the cervix was thought to be a cervical tumour. Laparotomy was performed, and puncture of the tumour showed it to be a case of hæmatometra and hæmatocolpos of right uterus. The retention

tumour was therefore opened through the vagina. The patient recovered, but died six months later from an intercurrent disease. The autopsy showed that it was a true case of uterus didelphys. The right vagina was occluded at its middle part, and thus divided into an upper portion, the seat of hæmatocolpos, and a lower rudimentary portion, open below and ending blindly above.

2. *Freudenberg's case* (9).—J. G—, aged 16. Commenced to menstruate at fifteen. After two ordinary periods the next was scanty, and was followed by amenorrhœa. At this time she at first had monthly molimina; later she had continuous pain, and a tumour appeared on the right side. When admitted to Schröder's Hospital at Würzburg, in 1877, she was anæmic, and seemed underdeveloped, mentally and bodily. She was found to have a double uterus, with hæmatometra of the right side. The fundus was but little affected, the cervix being mainly distended. The retained blood was evacuated. Twice in the following year she returned with similar symptoms. In 1879 the tumour reached to the navel. The vaginal aperture had become obliterated, so a piece of the vaginal wall was excised. She developed peritonitis, and died some weeks later.

Post-mortem.—The rectum was found between the two uteri and adherent to them and to the adnexa. On the right side was a ruptured pyosalpinx. The vagina (since the operation) was single: the two cervices opened on its roof, separated by a ridge. The left uterus was a normal half: left adnexa normal. The right cervix was dilated.

A drawing is given of the post-mortem specimen.

3. *Las Casas dos Santos' case* (14).—Patient aged 22, single. Menstruated first at seventeen, the blood being usually thick and dark, and the periods irregular and painless. At twenty she had, without cause, a great hæmorrhage of thick chocolate-coloured blood. For the last six months she had a bad-smelling discharge. On examination the hymen was found torn, cervix small, os nulliparous: on the left side of the cervix was a large soft tumour extend-

ing halfway down the vaginal wall. The sound passed 7 cm. into a uterine horn going up to the right. High up to the left was felt a small hard body, and beyond it the left ovary. The tumour was incised and pus escaped; it was contained mainly in the closed left vagina.

Patient made a good recovery.

(The details of this case are not very clearly given.)

4. *Werder's case* (22).—O. M—, aged 18, single. Menstruated first at fifteen. For two years she was regular, every three and a half weeks; the interval was then two weeks for a while, and later three and a half again, —always associated with much pain. Duration at first, two to four days; lately, longer. On examining the abdomen a tumour was found extending three inches above the pubes; on its left side was a projection which felt like a thumb, and was recognised *per vaginam* as a uterus; vulva normal. Two inches from the vestibule the finger encountered a round fluctuating mass almost blocking the vagina. To the left of this was a narrow canal, but the cervix could not be reached. Abdominal section was performed, a hæmatosalpinx and large hæmatometra were found on the right side; the ovary was normal. To the left was a separate uterus. The right tube was removed, and the fluctuating mass was then opened *per vaginam;* good recovery. Before leaving, an examination was made under ether. The right vagina was closed below, and a portion of the septum was therefore removed, throwing the two vaginæ into one. By the speculum both cervices could then be plainly seen, the right being a little higher and posterior. Between them were the remains of the vaginal septum. Bimanually the two uteri could be felt, separate and lying obliquely, each fundus pointing to the anterior superior spine of the same side. The internal surfaces of the two met, and were connected by a loose bridge of connective tissue, about one inch above the external os. When a sound was in each uterus the two sounds crossed in the vagina at an angle of 45 degrees.

5. *Löhlein's case* (23).—K. D—, aged 18, single. Menstruated first at sixteen, painlessly; later it was painful.

On examination a condition was found exactly like that in Werder's case, viz. right hæmatosalpinx, hæmatometra, and hæmatocolpos, the right vagina being occluded below.

On abdominal section the two uteri were found quite separate. Löhlein removed the right uterus. Patient made a good recovery.

In clinical importance these cases are identical with unilateral retention in other forms of double uterus. Cullingworth (35) has described an instance of this complication in a uterus bicornis, and gives an abstract of similar cases in his paper, where he also discusses the question of treatment, which must necessarily be operative. The diagnosis is often very difficult, and is generally not cleared up except after an abdominal section; if, however, the occlusion relates to the uterus alone, and the second vagina remains patent, the diagnosis is easy. In all the above cases, except that of Las Casas, abdominal section was required.

GROUP II.—*Pregnancy in One Half of a Uterus Didelphys.*

1. *Benicke's case* (7).—Patient aged 28, 1-para. When she came under observation she was in labour. The uterus occupied the middle line of the abdomen. The external genitals were normal. The vagina was divided by a septum into two nearly equal halves, the left being rather wider; both were of equal length. The septum was rather thick and œdematous. In the left vagina was a nearly fully dilated os uteri with a child's head presenting, and the septum was pressed to the right. In the right vagina was a rather swollen but virgin cervix: the right uterus admitted a sound for a distance of 11 cm., and lay behind the pregnant one. The pelvis was narrow. Delivery was effected by forceps under chloro-

form: the placenta was manually extracted. While still narcosed a careful examination showed that the two uteri were quite separate.

The puerperium was normal: there was no rupture of the perinæum, but a little of the vaginal septum. On the thirteenth day the left uterus was 7 cm. long; the right was 8 cm., and retroverted.

2. *Von Engel's case* (12).—In the extent of the deformity this case is unique. A. L—, aged 30, 1-para. Menstruated first between twenty-six and twenty-seven; regular: it began always from the right vagina, and after two or three days this ceased, and blood flowed from the left vagina for a day and a half.

She came under observation in labour: the deformity was evident. She was delivered by forceps. The vulva, vagina, bladder, urethra, and uterus were all double, and there was no pubic symphysis. Between the legs a rounded tumour was present: it appeared to be the fused contiguous labia majora. On each side of the tumour was a vulva, with two well-formed labia minora, and a labium majus externally: in the front of each vulva was a urethra, leading into separate bladders: by filling one bladder with milk and the other with water their distinctness was confirmed; the capacity of the right was one third greater than the left. Urine always flowed first from the right bladder. The uteri were quite distinct; the pregnancy occurred on the right side; the left hymen was intact.

For the first seven days of the puerperium the right urethra required to be catheterised, whilst the left bladder emptied spontaneously. On the fifth and sixth days there was hæmorrhage as of menstruation from the left vagina. The child was quite healthy. A drawing of the external organs is given in the original.

3. *Strauch's case* (13).—P. K—, aged 22, 1-para. Menstruation commenced at fifteen, regular, every three weeks; lasted six days; slight pain. At the confinement labour proceeded regularly till the head came down on

the perinæum, when it made no progress for two hours. Strauch was called in, and found the right labium majus lying by the side of the head. On the left side a membrane was stretched over the head, extending from below the urethra to the frænulum, with a free right border. The finger could be pressed in between this membrane and the left labium minus. The membrane was incised with strong scissors for $3\frac{3}{4}$ cm.; at the next pain the head was born; placenta followed after twenty minutes. Examination then showed a normal right vagina and portio; to the left was a narrow vagina and a virgin portio, whose os admitted the tip of the finger. Five days later, the day for leaving the hospital, the uteri were felt to be quite separate. The left admitted a sound 8 cm.: *per speculum* a reddish mass was seen hanging from the cervix; it was extracted, and found to be a complete decidua. Four and a half weeks later bimanual examination with two sounds (9 and 7 cm. respectively) showed two quite separate uteri.

4. *Las Casas dos Santos' case* (14).—Patient æt. 28, 1-para. Abortion previously at six months. Menstruation at fifteen, irregular but painless, six to eight weeks' rhythm. Now at term. Labour had commenced, but did not proceed as it ought. On examination the os admitted two fingers: the membranes were intact. To the left of the cervix and 3 cm. higher up was a hole passing to the left and ending in a tumour the size of a fist lying in the pelvic brim, behind and to the left of the uterus. From the orifice shreds of decidua protruded. The tumour was moved forwards over Poupart's ligament. The membranes were then punctured, and the head soon engaged with vigorous pains, during which both horns contracted. A living child was born three hours later. Two and a half hours after labour the parts were carefully examined, when the two uteri were found to be quite separate. The appendages could be plainly felt on both sides.

5. *Tauffer's case* (15).—A. F—, æt. 38, 3-para. Menstruation regular, scanty and painless. The first labour was

a natural head presentation, second was a breech, also natural. She had also had an abortion in the first month. Came for confinement. Labour went on well up to a certain point, then stopped. Examination showed a mass in the pelvis to the right and behind. External examination then showed that there was a second vagina, of normal size, containing a cervix with a parous os. The diagnosis was thus clear, and the labour was completed by slow extraction. On the third day a decidua was extruded from the right uterus. Some months later she was carefully examined; the two vaginæ were distinct, and each os was eroded. The bodies of the uteri were quite separate, and both had been pregnant. In each the sound passed 7 to 8 cm. Inquiry elicited that nothing special had ever been noticed in regard to cohabitation.

6. *Rossa's case* (18).—Patient aged 24, 2-para. No particulars of menstruation. First pregnancy ended fourteen days before term by an easy labour. Present pregnancy in seventh month. The labour was natural up to the manual extraction of the placenta. The vagina was double and the uteri separate, with a distance of 6—8 cm. between the fundi. The adnexa were normal, arising from the external uterine borders. The two cervices were separate, but held together by a membranous structure. The first pregnancy was in the left uterus, the second in the right.

7. *Holzapfel's case* (19).—H. H—, aged 25, 1-para. Menstruation at sixteen, free and painful. At nineteen the periods were irregular and prolonged. At twenty pain was much increased, and she had a bad-smelling vaginal discharge. At twenty-one she first came under observation with the above history. It was noted that she had a deep voice, as had also her mother. Examination: hymen intact, vagina narrow; at its summit was a small cervix close up against the left vaginal fornix; the fundus was small and curved upwards and to the right. To the left of the uterus was a mass, continuous below

with a swelling to the left of the vagina. On pressing this swelling, which was the size of an egg, a drop of pure pus appeared through a hole in the left vaginal wall. By the excision of a piece of this wall the pus escaped, and when the cavity was cleaned it was found that there was a second cervix with a very small os, not admitting a probe. The left fundus could be felt, pointing to the left.

Four years later she returned in labour. This went on naturally up to a certain point, then stopped. In the middle of the vagina was a cervix whose os admitted a finger into a small cavity lined with a thick, soft, decidual mass. Bimanually the fundus was found the size of a fist, retroflexed in the cavity of the sacrum. In front of the cervix and close up by the symphysis was found the second cervix, with the os dilated to the size of a five-shilling piece. When the os was fully dilated the head did not engage, and podalic version was effected. The child was stillborn. The non-gravid right os had dilated with the other. After labour the two fundi were distinctly felt separate, the cervices joined by a narrow band. Puerperium normal. It is noteworthy that conception was in the left uterus, whose orifice previously did not admit the sound.

8. *Von Dittel's case* (21).—T. K—, aged ?, 1-para. Always healthy. She came to the Gebärklinik for confinement. Two vaginæ were found ; in each there was a cervix. The right was small. The left os was dilated and a breech presented. Labour was natural and spontaneous. The vaginal septum was torn during the descent of the child. Fourteen days later the right uterus was the size of a fig, the left the size of a fist. Between them the hand could be pressed through the abdominal wall till it met the finger in the rectum. The child was living, and recovery was normal.

The most striking point about this series of eight cases is that in only one (von Dittel's) was labour natural ; in four—Benicke, Las Casas, Tauffer, Holzapfel—the descent

of the head was obstructed by the enlarged and retroverted non-gravid half; in one (Strauch) there was obstruction by the septum at the outlet. One (von Engel) required forceps; and in the seventh the placenta required manual extraction, as it did also in another case (Benicke, Rossa).

In two cases the obstructing half was held out of the way; in the other two the child was withdrawn past the mass by traction, one of the two cases requiring podalic version.

It is well, therefore, to remember the possibility of dystocia from this cause, as, owing to its rarity, it is not mentioned in text-books. I may here mention that in some cases reported on other grounds, including my own, natural labours had previously occurred.

It is interesting, from the physiological point of view, to find that in four cases there is mention of a decidua in the non-gravid half, whilst in a fifth there is mention of hæmorrhage from the empty uterus on the fifth and sixth days (von Engel). A decidua was also found in the non-gravid half of a uterus bicornis shown before the Obstetrical Society in 1884 by Dr. Cleveland (36).

A further point of interest is the observation in Las Casas' case that both halves of the uterus contracted simultaneously during the pains.

The prognosis as regards the child is fairly good; in only one case was the child stillborn.

Group III.—*Simultaneous Gestation in the Two Halves of a Uterus Didelphys.*

1. *Sotschawa's Case* (8).—The patient was aged 26, and had previously had a miscarriage, and twelve months before, a child born at term.

When she consulted Sotschawa, on account of hæmorrhage, she was three months pregnant. The external genital organs were normal; 1 cm. from the vulva began a septum dividing the vagina into two separate channels.

There were also two separate uteri, both pregnant; but while in one the pregnancy had advanced to three months, in the other it was only one and a half months. Sotschawa regarded it as a clear case of superfœtation.

2. *Althen's case* (17).—A. L—, aged 31, 1-para. Menstruation began at fourteen, and was regular. Last menstruation March 23rd, 1890. On August 2nd she aborted, of a male fœtus of four and a half months; it lived half an hour. A midwife attended her, and as the placenta had not come away three hours later she called in a medical man, who gave four grains of ergot every hour, up to seven doses. This had no effect on the placenta, but on August 3rd in the evening a second child was born, the same age as the first, and dead. Placenta still remained. The next day Althen was called in and found the patient very ill, with a temperature of 104·8°, and a pulse hardly perceptible. On examination he found a gaping os with thin membranes extruding; the right vaginal fornix was very deep, the left hardly existing. When he examined again he found the opposite condition, viz. a deep left fornix; and from the almost closed os protruded a small piece of placenta. He at once suspected double vagina and uterus, and this was confirmed by inspection. The vaginal septum began just behind the urethral meatus, and was complete. Each vagina had a ring-shaped hymen, broken through in the middle line. The right vagina was rather the wider. Bimanually a uterus was found on each side; between them the abdominal wall could be depressed to the level of the os externum. On each side an ovary was felt. Althen succeeded in removing the placentæ, which smelt badly. The patient made a satisfactory recovery.

These cases illustrate a complication that may be very puzzling, and attended with considerable risk at the time of labour. It would be interesting to know what would be the course of such a labour at full term, but there is not a case recorded. Two cases have, however, been described of twin gestation in other kinds of double uterus;

one by Harris Ross (30) in the case of a uterus septus, and one by Perrault (31) in a case probably of uterus bicornis. Ross's case was one of considerable difficulty. Perrault's died, after an instrumental delivery, of puerperal fever.

Group IV.—*Cases uncomplicated by Gestation or Retained Products of Menstruation.*

1. *Heitzmann's case* (10).—Patient aged 23, single, had suffered for some time from blennorrhagia. As it did not improve under treatment a more exact examination was made, when it was found that the vagina was completely double. The septum was two lines thick, and placed obliquely; the left vagina was larger, but both were of equal length. At the end of each was found a small but normal vaginal portion, the left being larger. A sound passed 5 cm. in the left side, and 4½ in the right; and with the two sounds in position a bimanual examination showed that the two sides were connected only by a small bridge at the level of the ora externa. The two bodies, as also the two tubes and ovaries, could be distinctly palpated. The patient had menstruated regularly and without pain since the age of fifteen.

The want of success in treatment was thus explained, inasmuch as only one vagina was treated, while both were affected.

2. *Dirner's case* (11).—Patient, aged 27, had menstruated regularly and with pain since the age of fourteen. She had been married ten years without becoming pregnant. Six months before she came under treatment she noticed that on passing water after coitus there was evidence of cohabitation through the urethra. Examination showed a dilated urethra, and behind it two vaginal orifices, each admitting the sound. These were enlarged with graduated dilators. She then conceived, but miscarried in the fifth month. She came under observation again for pain and leucorrhœa. The right vagina now

admitted the finger, the left was broader; in each was a cervix, and the uteri were separate. This was confirmed by an examination *per rectum* and *per urethram*, the latter admitting a finger. There was no incontinence of the bladder.

3. *Las Casas dos Santos' case* (14).—Patient aged 26, married. Menstruation regular and painless since the age of fourteen. She had borne three children, two at seven months and one at eight months; the last was three and a half months ago. She came complaining of abdominal pain. By the speculum there was seen, to the right, a parous os; to the left a virginal one; between the two a marked vaginal septum. Sound passed 6 cm. in left orifice, 8 cm. in the right. *Per rectum* the finger could easily be laid between the two uteri.

4. *Kiderlen's case* (16).—E. B—, aged 33, menstruated regularly since the age of sixteen. Married ten years; a miscarriage nine years ago, no other pregnancy. Came complaining of abdominal pain since three weeks.

Examination showed two vaginæ and two separate uteri; the sound passed 6 cm. in the right half, and 7 cm. in the left. Right ovary was swollen and tender. Later she returned with acute inflammation of the right bartholine gland which was excised.

5. *Kochenburger's case* (20).—M. K—, æt. 27, married. Menstruated first at eighteen; the menses were abundant, and accompanied by pain. Married for two and a half years, she had not become pregnant. She came complaining of dysmenorrhœa and dyspareunia. Examination showed normal external genitals, a narrow vagina divided into two by a septum, in each vagina a virginal portio. The cervices could be distinctly isolated; the bodies, separate and the size of pears, were easily palpated by recto-abdominal examination. The right half was 6½ cm. long, the left 7 cm. On each side was an interstitial glandular endometritis. After some time, as the dyspareunia continued, the septum was removed.

6. *The case above reported.*

This group illustrates a further series of complications to which the condition may give rise. In one there was dyspareunia, due to the narrowness of the two vaginæ; in a second, normal intercourse did not take place till the vaginæ had been dilated; whilst in a third a vaginitis remained persistent because one half only was treated. In my own case the patient's condition was discovered through the inconvenience caused by the protruding remainder of the septum. Lastly, in the cases of Las Casas and Kiderlen it was discovered by pure accident, as the symptoms were not directly associated with the condition.

Two other cases have been recorded, in which the authors were not sure whether the malformation was uterus didelphys or bicornis; they are cases of Litschkus (33) and Kubassow (32): these are not included in my list, as I wished to confine my attention to authentic cases.

Group V.—*Cases recognised in the First Instance by Autopsy.*

For the sake of completeness I give an abstract of these, in order to fill up the list of cases recorded in adults; otherwise they do not strictly belong to a paper dealing with the clinical aspects of the condition.

1. *Ollivier's case* (24).—The patient at her sixth confinement developed eclampsia, and died not long after with hepatic cirrhosis. She had previously had four normal and one instrumental deliveries. The autopsy showed that the two halves of the uterus were completely separate: intestinal coils lay between them. The left uterus was the larger, and parous; the right was normal but virginal, so that all six pregnancies must have occurred on the left side.

2. *Kubassow's case* (25).—From a woman who died of recurrent fever. The two halves were quite separate; the right uterine cavity was 7 cm. long, the left 3 cm. The left vagina was 2·5 cm., and did not communicate

with the uterus. The left half had probably not menstruated. The woman was 38, and had borne several children normally.

3 and 4. *London Hospital Museum specimens* (26).—I am indebted to Dr. Herman for calling my attention to these specimens.

No. 2182. This specimen shows all the typical appearances of uterus didelphys, except that the cervices are outwardly connected in such a way that it would be difficult to say, without dissection, whether it should strictly come under the description of "uterus bicornis bicollis." The woman, aged thirty-five, had borne two children, and nothing abnormal had been noticed about her; she committed suicide, and the malformation was discovered by Mr. McCarthy at the autopsy.

No. 2183. This is a unique specimen. The right vagina, the urethra, and the rectum open into a common cloaca. The normal right half uterus opened into this vagina. The left vagina had no external outlet, nor could a probe be passed from it into the small left uterus, which measured 1½ inches in length. The left Fallopian tube was not patent at the uterine end; its external half was dilated to a sac the size of an orange, filled in the recent state by thick chocolate-coloured fluid. The left vagina contained a similar fluid. The obliteration of the two extremities of the left uterus was therefore secondary.

The woman was aged 56, and had borne two healthy children. The cloacal condition was discovered shortly before death by the house physician, who had ordered an enema. The double uterus was found by Dr. Sutton at the autopsy.

In the new-born the malformation is more common, associated with other defects in development. Heppner's case (27) has become classical, and a case was recorded in this country by Knipe (28).

The accompanying table allows of a comparison of the

principal points in the cases of this malformation in living adults. I will here summarise some of them.

1. *Age.*—As we should expect, the condition was discovered earlier in the cases of hæmatometra and hæmatocolpos than in the others, viz. at sixteen, eighteen (2), and twenty-two. One is not given. The remainder were mostly between the ages of twenty and thirty.

2. *Marriage.*—Fifteen out of 21 were married; in 2 of these there was history of dyspareunia. In 3 coitus had taken place in both vaginæ.

3. *Parity.*—Of the 15 married only 1 had not been pregnant; three others had had only a miscarriage, and in one of these the miscarriage occurred from double pregnancy.

The remaining 11 had borne living or viable children. The prognosis as regards fertility is therefore good. The prognosis is not so good, however, as to labour, although this is better than one would be led to expect. Among the 11 were 16 labours, of which 10 were natural. The remaining 6 had the following characters:—In 3 obstruction by the retroverted non-pregnant half; in 1 obstruction by the septum. It is curious that in this case the two previous labours were unimpeded. Lastly, in 2 cases forceps were required.

4. *Relative size of the two halves.*—In 4 cases they must be regarded as about equal, inasmuch as both halves had become pregnant. In the remaining 17 the right half was the larger in 6, and the left in 11.

5. *Vaginal condition.*—In only 1 case was the vagina originally single: in 6 there was atresia of one half; in 14 the two channels were patent and quite separate.

6. *Menstruation.*—The age of the first appearance is given in 15 cases, distributed as follows:—At fourteen, 3 cases; at fifteen, 5 cases; at sixteen, 4 cases; at seventeen, 1 case; at eighteen, 1 case; at twenty-six, 1 case. There is thus a slight tendency to delayed menstruation. In 12 cases menstruation was regular, in 4 irregular. In 11 menstruation was painless, in 1 there was slight pain; 3

complained of dysmenorrhœa. This proportion is rather more favourable than usual.

It is not stated in any of the cases of pregnancy occurring in one half whether the non-pregnant half menstruated during pregnancy, but from the frequent occurrence of a decidua in the non-pregnant half it is probable that menstruation did not occur.

In one case the two halves menstruated separately; the flow always began from the right side, lasting two to three days, after which there was discharge for a day and a half from the left side.

In conclusion, I think it may be useful to give a list of the clinical complications to which this malformation may give rise.

1. Unilateral atresia, with retained menstrual products.
2. Dyspareunia.
3. Double vaginitis or endometritis, treated unsuccessfully by applications to one side only.
4. Obstruction to labour by a displaced empty half.
5. Obstruction due to the vaginal septum.
6. Retained and undiscovered products of conception in one half in cases of double pregnancy.

P.S.—Since I sent in my paper I have come across two other cases of uterus didelphys, both recorded this year.

Rossier (23 *b*) at the *Société Vaudoise de Médecine* gave an account of a patient who aborted in the second month of pregnancy. In the vagina two separate vaginal portions were found, and bimanually the two fundi and the two cervices were quite distinct. The left uterus required curetting on account of hæmorrhage.

Tschudy (23*a*).—H—, aged 30, 1-para, began to menstruate at eighteen; the periods were regular, scanty and painless at first. After two years she suffered greatly before the periods, later the pain became continuous. At twenty-one she was treated in the hospital at Zurich for hæmatometra and hæmatocolpos in what proved to be the left

half of a uterus didelphys. At twenty-nine she married and became pregnant. The pregnancy went on to term without incident. She was admitted into the Zurich Hospital for her confinement, after having been in labour for three days with no progress. At this time the pains were weak and frequent, the os was closed, and the uterus remained contracted between the pains. The liquor amnii had come away two days before. Under narcosis the right half of the uterus could be distinguished quite separate from the pregnant half, measuring six inches, and containing decidua. Completion of delivery by natural means appeared impossible, whilst rupture of the uterus was threatened. A Cæsarean section was decided upon. On opening the abdomen the right uterus was found entirely distinct from the left, and having its own tube and ovary attached on the right side. The child was extracted in a state of asphyxia, and only lived twelve hours. The uterus was amputated by Porro's method. It had the appearance of a normal puerperal uterus. On its left side were a tube and ovary, the latter containing a corpus luteum. The convalescence was uninterrupted. The obstruction to labour was explained by the narrowing of the os externum, which followed the evacuation of the retained menses nine years previously.

Addendum.

The next four cases were referred to in the discussion following the reading of the paper, and I have to thank the Society for permission to add them to the cases above related.

Dr. Amand Routh's Cases.

Case 1.—Double vagina and two-horned uterus, with complete separation. Subinvolution in the right horn (23 *c*).

A. H—, aged 24, began to menstruate at thirteen, menses regular. Married five years, three children. There was

amenorrhea during pregnancy. She came under observation complaining of leucorrhœa and right-sided pain, with depression of spirits and emaciation.

Examination.—Vagina transversely widened at uterine end, and along its whole length, anteriorly and posteriorly, is a thickened ridge of mucous membrane, centrally placed, which is especially distinct near the hymen and between the uterine vaginal portions, where it is inserted. Probably the septum was torn through at first labour. On each side of the upper insertion of the septum is a cervix uteri, that on the left virgin, that on the right fissured. Sound enters left cervix two and a half inches towards the left, and the right cervix three and a quarter inches backwards and to the right. Bimanually the two horns are felt to move independently, to be loosely united by a thick transverse band, and to be leaning away from each other. Under treatment the right horn of the uterus involuted down to two and three quarters inches, and the subjective symptoms disappeared.

Case 2 (23 *d*).—As this case has already been fully reported in these 'Transactions,' I will content myself with mentioning it.

Dr. Galabin's Cases.

These have not been previously published, and I wish to express my great indebtedness to Dr. Galabin for his kindness in furnishing me with the following notes, and allowing me to include them in this addendum.

Case 1. *Rudimentary uterus didelphys associated with congenital absence of vagina.*—Alice H—, aged 19, was admitted into Guy's Hospital August 27th, 1894.

She has never menstruated. Since the age of fifteen she has had great pain in the abdomen, back, and left side at monthly intervals, lasting for about ten days. Pain in abdomen is accompanied by severe frontal headache.

The vulva is well developed, but the vagina is com-

pletely absent. On examination under anæsthetic, only a very thin septum was found to intervene between the rectum and a sound in the bladder. The right ovary could be easily felt, rather large; only a small nodule in position of left ovary. No uterus could be felt, but two diverging cords, which it was thought might be Fallopian tubes.

Abdominal section was performed on September 13th. A rudimentary uterus didelphys was found, the halves divided by a cleft extending quite to the bottom of the vesico-rectal pouch of peritoneum. The ovaries and tubes appeared normal, the right ovary larger than the left. The ovaries and tubes were removed, the halves of the uterus being left. The patient made a good recovery. The Fallopian tubes were found to be pervious.

The patient was seen in October, 1895. She had lost her monthly pain, but still had occasional pain, of similar character to the former.

Case 2. *Uterus didelphys with fibroid tumour of one side.*—Miss A—, aged 42, had had an abdominal tumour for ten years or more. In June, 1891, she was laid up in bed with acute abdominal pain and pyrexia. On examination a fibroid tumour of the uterus was found, reaching three inches above the level of the umbilicus, its surface somewhat irregular. There were signs of a not very severe peritonitis. The vagina was found to be completely double, the two halves of equal size, each provided with a cervix uteri. She had not been aware of any abnormality.

A more complete examination was made a month later, when the peritonitis had subsided. A sound passed five and a half inches into the left cervix uteri, and evidently went nearly into the centre of the tumour. Into the right cervix the sound passed 2½ inches; and bimanually it was found that the right uterus, with the sound within it, was quite moveable, and entirely separate from the tumour of the left uterus.

It was decided not to advise any operation, the menorrhagia not being excessive.

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TABLE OF PUBLISHED CASES.

Table of Published Cases of Uter

No.	Date.	Observer.*	Age.	No. of children.	Larger half.	Condition for which reported.	Age at 1st menstruation.	Dysm norrh
1	1874	Staude (6)	?	S.	Left	Hæmatocolpos and hæmatometra (R.)	—	—
2	1877	Benicke (7)	28	1	Left	Pregnancy, left half	?	—
3	1878	Sotschawa (8)	26	1	Equal	Simultaneous pregnancy, both halves	—	—
4	1880	Freudenberg (9)	16	S.	Left	Hæmatocolpos and hæmatometra (R.)	15, Irr.	N
5	1884	Heitzmann (10)	23	S.	Left	Double vaginitis	15, Reg.	N
6	1884	Dirner (11)	27	1	Left	Cohabitation *per urethram*	14, Reg.	N
7	1887	Engel (12)	30	1	Right	Pregnancy, right half	26, Reg.	N
8	1887	Strauch (13)	22	1	Right	Pregnancy, right half	15, Reg.	Slig
9	1888	Las Casas (14)	22	S.	Right	Pyocolpos, L.	17, Irr.	N
10	1888	Do.	28	1	Right	Pregnancy, right half	15, Irr.	N
11	1888	Do.	26	3	Right	Abdominal pain; abnormality discovered by accident	14, Reg.	N
12	1888	Tauffer (15)	38	3	Equal	Pregnancy, left half	? Reg.	N
13	1888	Kiderlen (16)	33	0 1 misc.	Left	Abdominal pain; abnormality discovered by accident	16, Reg.	N
14	1890	Althen (17)	31	1	Equal	Double pregnancy	14, Reg.	—
15	1892	Rossa (18)	24	2	Equal	Pregnancy, right half	?	—
16	1893	Holzapfel (19)	25	1	Right	Pregnancy, left half	16, Irr.	Y
17	1893	Kochenburger (20)	27	0	Left	Dyspareunia	18, Reg.	Y
18	1894	Dittel (21)	?	1	Left	Pregnancy, left half	?	—
19	1894	Werder (22)	18	S.	Left	Hæmatocolpos and hæmatometra (R.)	15, Reg.	Y
20	1894	Löhlein (23)	18	S.	Left	Hæmatocolpos and hæmatometra (R.)	16, Reg.	N pai fir
21	1895	Giles	31	1	Left	Protruding remains of vaginal septum	16, Reg.	N

* The numbers refer to the Bibliography.

elphys in Living Adults.

Character of labours.	Vaginal condition.	Remarks.
—	Left vagina normal; right occluded in the middle	Discovered by laparotomy, and confirmed by P.M. later.
row pelvis; forceps; extion of placenta	Two separate vaginæ of equal length; left rather wider	—
rious labour natural; prest pregnancy 3 months	Two separate vaginæ, equal size	Regarded as a case of superfœtation.
—	Left vagina normal; atresia on left side	Confirmed by P.M.
—	Two separate vaginæ; left larger	—
carriage at 5th month	Two separate vaginæ; at first very narrow; later the left larger	—
eps	The two vaginæ separate; vulva also double	Double vulva, urethra, bladder, vagina, and uterus; no symphysis pubis; the halves menstruated separately.
ruction by vaginal sepn	Two separate vaginæ, the left narrow	—
—	Right vagina normal; atresia of the left half	—
ruction by left retrted half	Single	—
ural, at 7 and 8 months	Septum probably torn during labour; vagina single since	—
t 2 natural; 3rd obucted by right retrted half	Two separate vaginæ, equal size	—
—	Two separate vaginæ, about equal	—
rtion at 4½ months: rened placentæ	Two separate vaginæ, equal size	—
n natural, except for nual extraction of plata in 2nd	Two separate vaginæ, equal size	—
ruction by right retrted half	Right half normal; left half originally occluded below	—
—	Two separate vaginæ, both narrow	—
ural	Two separate vaginæ, left larger; septum torn during labour	—
—	Left vagina patent; right occluded below	Discovered by laparotomy; recovery.
—	Left vagina patent; right occluded below	Discovered by laparotomy; right hysterectomy; recovery.
ural	Septum destroyed at the time of labour; now one vagina	—

Dr. Galabin referred first to two cases of uterus didelphys, one associated with congenital absence of the vagina, one with fibroid tumour of one uterus only, notes of which are appended to Dr. Giles's paper. In a third case he had met with dystocia of a very unusual kind arising from a double uterus, not a complete uterus didelphys, but rather a uterus bicornis, yet not of the usual kind, for the uteri were completely separate, without any uniting band, even below the level of the internal os. The lower part of cervix, however, was common. The woman had had several children normally, but for some unexplained reason, in her last pregnancy the poles of the two uteri became turned in opposite directions. The result was that the ovum, which began in one uterus, made its way also into the other. At full term the fundus was in the normal position; the other fundus lay in a reversed position in the pelvis, and contained the head of the fœtus. The patient was admitted into Guy's Hospital in labour, and the true state of affairs was naturally not discovered till abdominal section had been performed. A large hard mass filled the pelvis, and was thought to be a fibroid tumour. The os was quite out of reach, the liquor amnii had escaped, and a hand of the fœtus could just be touched.

Cæsarean section having been performed and the fœtus removed, the displaced half of the uterus at once sprang back to its normal position, and the two halves lay side by side. The incision, at first straight, was thus converted into an elongated U shape, and the centre of the U ran through very thin overstretched cervical tissue. The edges had become so distorted that it was very difficult to sew up the incision satisfactorily. This was at length accomplished, and the patient recovered without bad symptoms, the child also being alive.

Dr. Amand Routh thought these cases were not as rare as the scanty bibliography appeared to indicate. He had seen two cases. The first was described and pictured in the now defunct 'Illustrated Medical News' for March 9th, 1889, p. 224. The woman was married, 3-para, aged 24. Catamenia began at 13½. Amenorrhœa during pregnancy. The vaginal septum had been torn through, but the two uteri were quite distinct, one being anteverted, 2½ inches long, the other (right) being 3¼ inches long and retroverted. Bimanually the uteri were felt to be quite separate, but joined loosely by a thick transverse band. She was suffering from subinvolution in the larger uterus. His second case was described in the 'Obst. Soc. Trans.,' vol. xxxvi, 1894, p. 157, where it is given *in extenso* to compare it with another case of vaginal cyst due to a distended Gärtner's duct. The patient, a single woman aged 27, was under the care of Dr. C. H. F. Routh, and was found to have a tense vaginal ridge on the left side, continuous with an elastic mass in the pelvis on the left of what

appeared to be a normal uterus. The vaginal ridge was incised and its contents allowed to escape; it was then found to be a case of distinct double uterus and double vagina with left vaginal atresia, producing hæmatocolpos and hæmatometra. The left uterus eventually contracted down to its normal $2\frac{1}{2}$ inches, but remained retroverted.

Dr. GILES, in reply, agreed with Dr. Routh that these cases were probably not quite so rare as the literature would lead them to expect. He would point out, however, that the three cases of Las Casas were not all met with in the same year: the date in the table was the date of publication of Las Casas's paper. Two factors contributed to the rarity of records: firstly, the existence of the malformation might easily be overlooked; secondly, cases even when recognised were sometimes not published. He was afraid this latter reproach applied especially to British observers.

He was exceedingly interested in the cases related by Dr. Galabin; and as he gathered that they had not been already recorded, he would like to ask permission of the Society and of Dr. Galabin to include a short account of the two cases of uterus didelphys in his paper in the form of an appendix. As Dr. Galabin had said, the complications were in both cases different from any related in the paper; and it would be a pity for such important and interesting conditions to remain unrecorded.

In conclusion, he wished to thank the Fellows for the courteous attention they had given to the reading of the paper. Narratives of different cases were sometimes rather uninteresting to listen to; but he had felt that this was the only satisfactory way of bringing the details of the condition of uterus didelphys before the English-reading medical public.

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